SERVICE MANUAL

Affinity® Three Birthing Bed

From Hill-Rom

Product No. P3700

For Parts or Technical Assistance **man272ra**
USA (800) 445-3720 Canada (800) 267-2337
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Affinity® Three Birthing Bed Service Manual

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Chapter 1 Introduction

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Purpose

This manual provides requirements for the Affinity® Three Birthing Bed normal operation and maintenance. It also includes parts lists (in chapter 5) for ordering replacement components.

Audience

This manual is intended for use by facility-authorized personnel only. Failure to observe this restriction can result in severe injury to people and serious damage to equipment.

Organization

This manual contains seven chapters.

Chapter 1: Introduction

Chapter 1 provides a brief description of this service manual and a product overview.

Chapter 2: Troubleshooting Procedures

Chapter 2 contains repair analysis procedures. Use these procedures to gather information, identify the maintenance need, and verify the effectiveness of the repair.

Chapter 3: Theory of Operation

A theory of operation is not available for the Affinity® Three Birthing Bed.

Chapter 4: Removal, Replacement, and Adjustment Procedures

Chapter 4 contains the detailed maintenance procedures determined necessary in chapter 2.

Chapter 5: Parts List

Chapter 5 contains the warranty, part-ordering procedure, and illustrated parts lists.

Chapter 6: General Procedures

Chapter 6 describes cleaning, preventive maintenance, and other general procedures.

Chapter 7: Accessories

Chapter 7 provides a list of additional products which can be used in conjunction with the Affinity® Three Birthing Bed, with installation procedures for some of these accessories.

Typographical Conventions

This manual contains different typefaces and icons designed to improve readability and increase understanding of its content. Note the following examples:

- Standard text—used for regular information.
- **Boldface text**—emphasizes a word or phrase.
- **NOTE:**—sets apart special information or important instruction clarification.
- The symbol below highlights a WARNING or CAUTION:

Figure 1-1. Warning and Caution

  - A WARNING identifies situations or actions that may affect patient or user safety. Disregarding a warning could result in patient or user injury.
  - A CAUTION indicates special procedures or precautions that personnel must follow to avoid equipment damage.
- The symbol below highlights a CAUGHT HAZARD WARNING:

Figure 1-2. Caught Hazard Warning

- The symbol below highlights a CHEMICAL HAZARD WARNING:

Figure 1-3. Chemical Hazard Warning

- The symbol below highlights an ELECTRICAL SHOCK HAZARD WARNING:

Figure 1-4. Electrical Shock Hazard Warning

Introduction

The Affinity® Three Birthing Bed is intended to be used as a birthing bed within the acute care Labor and Delivery Unit. The Affinity® Three Birthing Bed is a three-motor birthing type bed with multiple articulation features (see “Bed Position” on page 1-24). A variety of options are available including nurse call, air system, night light, auxiliary outlets, and siderail controls. See “Features” on page 1-6 for additional information concerning some of the Affinity® Three Birthing Bed features.

NOTE:
Any reference in this manual to a side of the bed is from the point of view of a patient lying in the bed on her back. This information appears in the manual wherever it is pertinent.

Operating Precautions

Before operating the Affinity® Three Birthing Bed, be sure that you have read and understand in detail the contents of this manual. It is important that you read and strictly adhere to the safety precautions (see “Safety Tips” on page 1-24).

For additional operating precautions for the Affinity® Three Birthing Bed and its accessories, refer to the *Affinity® Three Birthing Bed User Manual*.

Features

The Hill-Rom Affinity® Three Birthing Bed incorporates three independent motors to raise and lower the following bed features:

- Bed height
- Foot section
- Head section (The seat section automatically tilts with head section operation.)

These functions are governed by P.C. board logic and controlled by the use of the siderail bed controls or an optional hand-held, six-function pendant.

Head Section Inclination

The bed is mechanized so that the patient or attendant may elevate the head section by pressing a switch. The head up/head down switches are momentary contact type switches and are pictorially labeled to indicate their function. The

switches are fixed in relation to the head section and within easy access of both the occupant and attendant, regardless of the degree of inclination.

Foot Section Inclination

The bed is mechanized so that the patient or attendant may elevate the foot section by pressing a switch. The foot up/foot down switches are momentary contact type switches and are pictorially labeled to indicate their function. The switches are fixed in relation to the head section and within easy access of both the occupant and attendant, regardless of the degree of inclination.

High Low Sleeping Surface (Hilow)

The bed is mechanized so that an attendant can raise or lower the sleeping surface to facilitate examination or bed ingress or egress. The hilow up/down switches are momentary contact type switches and are pictorially labeled to indicate their function. The switches are fixed in relation to the head section and face toward the attendant position only. The hilow up/down switches are not accessible to the occupant.

Battery Back-up

The Affinity® Three Birthing Bed is designed with battery back-up as a standard feature. The battery allows the hilow, foot, and head motors to be activated from the siderail controls without power being supplied to the bed. In addition, the battery powers the nurse call function, but it does not power any other bed functions.

Battery Back-up LED Indicators

- ON = Battery status is operational or when bed is plugged into the appropriate power source.
- FLASHING = Battery needs charging.
- OFF = Battery is discharged below the level required to run the motors.

CAUTION:
Remove the battery if the bed will not be in service for extended periods of time. Failure to do so could result in damage to the life of the battery or damage to the bed. Contact the appropriate maintenance personnel.

If the battery has been completely discharged, it may take up to 36 hours to recharge to operational status.

To ensure the battery is always charged, plug the bed into the appropriate power source whenever possible. If the battery is discharged or unplugged, the bed is still functional when plugged into the appropriate AC receptacle.

Disposal

Pb

Power comes from a lead acid battery, which needs to be disposed of properly according to your local regulations.

For assistance in disposing of the battery, contact your maintenance technician.

Auxiliary Outlet

The two auxiliary outlets provide electrical power for accessories.

Automatic Tilt

As the head section is raised, the seat gradually tilts up from 0 to 15 degrees. As the head section is lowered, the seat gradually returns to a flat position.

Headboard

The headboard is mounted to a metal frame. The headboard has built-in handles, which aid in steering control and increase mobility. The headboard is removable.

Docking/Wall Protection

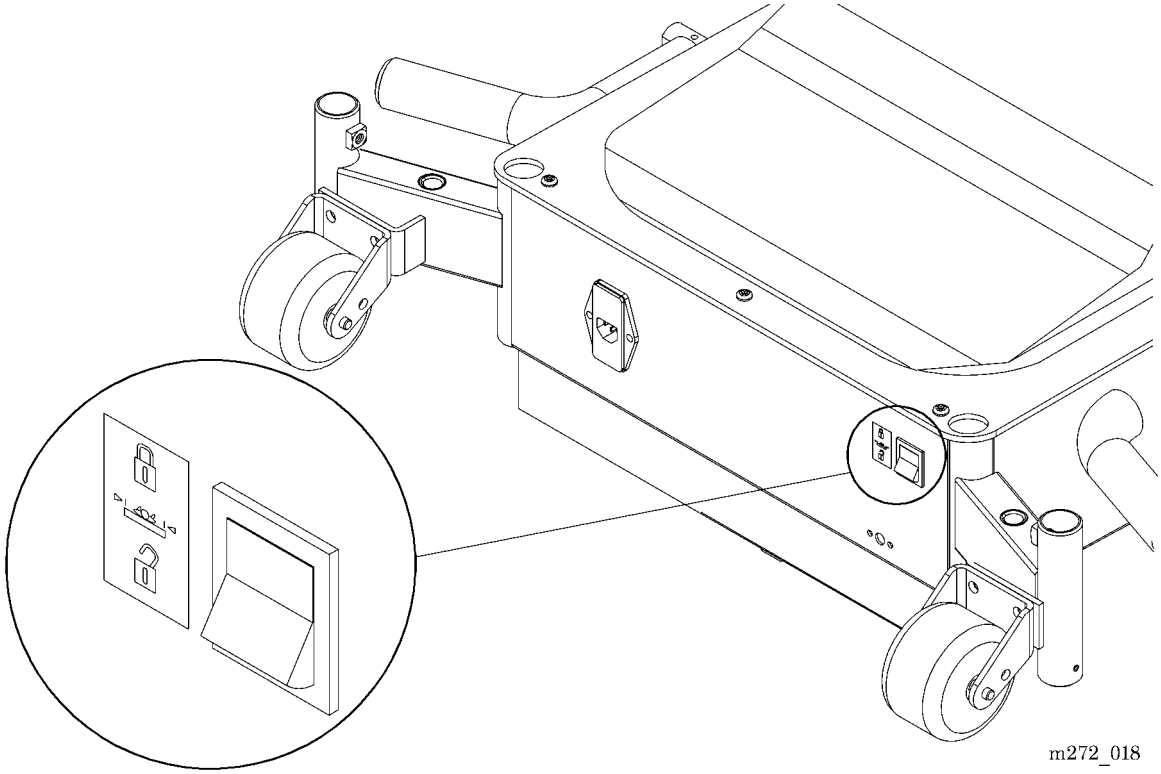
Standard roller bumpers, located at the head end of the bed, protect walls and headwall systems from damage.

CAUTION:
Do not position the head of the bed against a wall or beneath any fixtures. This is to prevent damage due to the arcing motion of the bed while the bed is being raised and lowered.

Lockout Control Switch

The lockout control switch is located at the head end of the bed on the frame (see figure 1-5 on page 1-9). This control is used to deactivate the patient (inboard) and caregiver (outboard) siderail controls.

Figure 1-5. Lockout Switches



Night Light

The night light is located under the bed. A photocell control automatically turns the light on when the room darkens and turns it off when it gets brighter.

Foot Support Assemblies

The Affinity® Three Birthing Bed is equipped with built-in foot support assemblies designed to remain on the unit during normal usage. The assemblies can be simultaneously positioned up or down, through use of the motor-powered, foot section yoke. This foot section yoke controls the overall height up and down. Each foot support can be independently positioned by using the mechanical release latch at the end of the foot supports.

The following positional adjustments can be made:

- To position the patient's legs, squeeze the release lever and rotate the foot support. The foot support rotates upward and outward from 0° to 85°.
- To return to the storage position, squeeze the release latch again, and return the supports to the desired position.

Each foot support is attached to the bed and can only be removed by the appropriate personnel.

Labor Grips

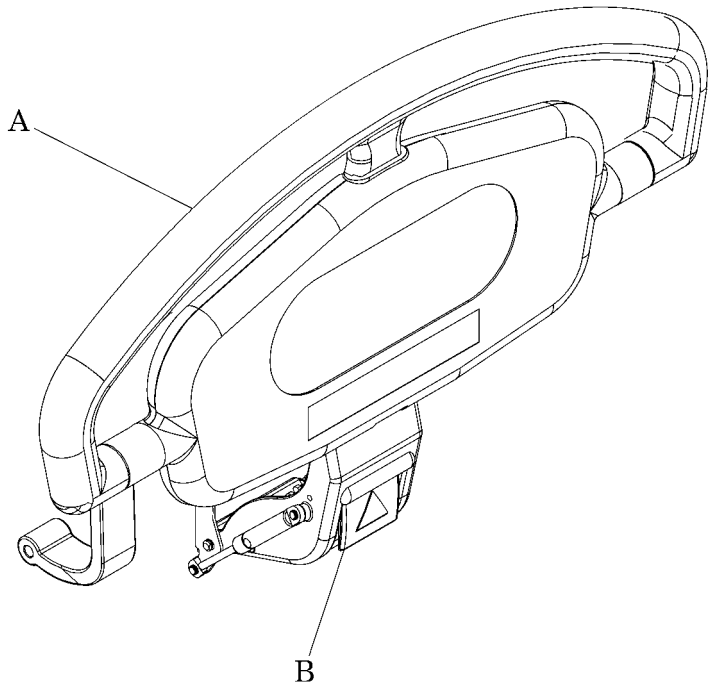
To raise the labor grip, grasp the grip, and rotate it up from under the bed until it clicks. This signals that it has locked into position. Ensure that the labor grip is properly locked by giving it a tug.

To lower the labor grip, pull the release handle, and lower the grip under the bed.

Siderails

To raise the siderails (A), grasp the top center of the siderail, and pull out and up from beneath the bed (see figure 1-6 on page 1-10). Rotate the siderail upward until it clicks. The clicking sound signals that the siderail has locked into position. Ensure that the siderail is up and properly locked into position by giving it a gentle tug.

Figure 1-6. Siderails



To lower/store the siderail, pull the release handle (B), and allow the siderail to lower into the down or storage position.

The siderail stores in a position that does not extend outward from the width of the bed. This feature aids in preventing transfer gaps when two beds are placed side by side.

Trend-Like Position Operation

Trend-Like positioning to 8° is achieved mechanically from any bed height position by depressing one of two Trend-Like position handles. Trend-Like position handles are located near the head end of the bed under the head section. Depressing either one of the handles releases gas-assisted springs (cylinders) and allows for easy positioning.

To place the sleep surface in Trend-Like position, push down on the handle, and guide the bed to the desired angle. If the desired Trend-Like position cannot be achieved because the bed is too low, the bed's hilow function will automatically raise the bed until the proper position is reached.

To return the bed to the level position, pull up on the handle. Mechanical limits stop the travel when the sleep surface is level. Quickly release it when the bed is in the desired position.

Depending on the position of the head section and the weight of the patient, the amount of activation force required to place the bed in or out of the Trend-Like position varies. For example, with a patient occupying the bed and the head section raised to 45^{o}, the bed will more easily go out of Trend-Like position, versus going into the Trend-Like position. With a patient occupying the bed and the head section in the flat position, the bed will more easily go into the Trend-Like position, versus going out of the Trend-Like position.

NOTE:
The bed must be in the flat (level) position and out of the Trend-Like position, for the hilow to work properly.

CPR Release

The head section has a releasing mechanism for rapid emergency lowering. The release mechanism requires intentional action to release it. The bed mechanism recognizes the de-coupling and automatically lowers the head and seat section; then it recouples the head and seat mechanism. This ensures proper head section lifting after the emergency.

A CPR release handle is located on either side of the bed, beneath the head section. To operate, pull the CPR handle and hold. With a patient in the bed, the head section will lower to a flat position within approximately 7 seconds.

The Integrated Air Support System

The integrated air support system allows the patient or attendant to select the desired level of firmness in the lumbar and seat sections of the mattress. Both the patient and attendant can control these functions from the siderail. The lumbar bladder, when fully inflated, appears as a large round bump in the mattress. The seat bladder, when fully inflated, does not have a specific appearance. Proper operation of the seat bladder is best determined by lying on the bed and activating the seat inflate function.

Seat Section Mattress

The seat section mattress has auto-inflate and auto-deflate functions. The appropriate button need be pressed only once to achieve full inflation or deflation of the mattress.

Seat Section Mattress Auto-Inflate or Deflate Control

To automatically inflate or deflate the seat section, press the caregiver seat inflate button (plus sign) or caregiver seat deflate button (minus sign) once. The seat section will inflate or deflate for approximately 20 to 25 seconds and then automatically stop.

If a complete inflation or deflation cycle is not necessary, press the caregiver seat inflate or caregiver seat deflate button a second time to stop the inflation or deflation.

Back Section Lumbar Mattress

The back section lumbar mattress does not have auto-inflate or auto-deflate functions. The appropriate button must be pressed and held until the desired inflation is attained.

Back Section Lumbar Mattress Control

To inflate the back section, press and hold the back inflate button (plus sign) until the desired firmness is attained.

To deflate the back section, press and hold the back deflate button (minus sign) until the desired softness is attained.

Mobility/Braking and Steer System

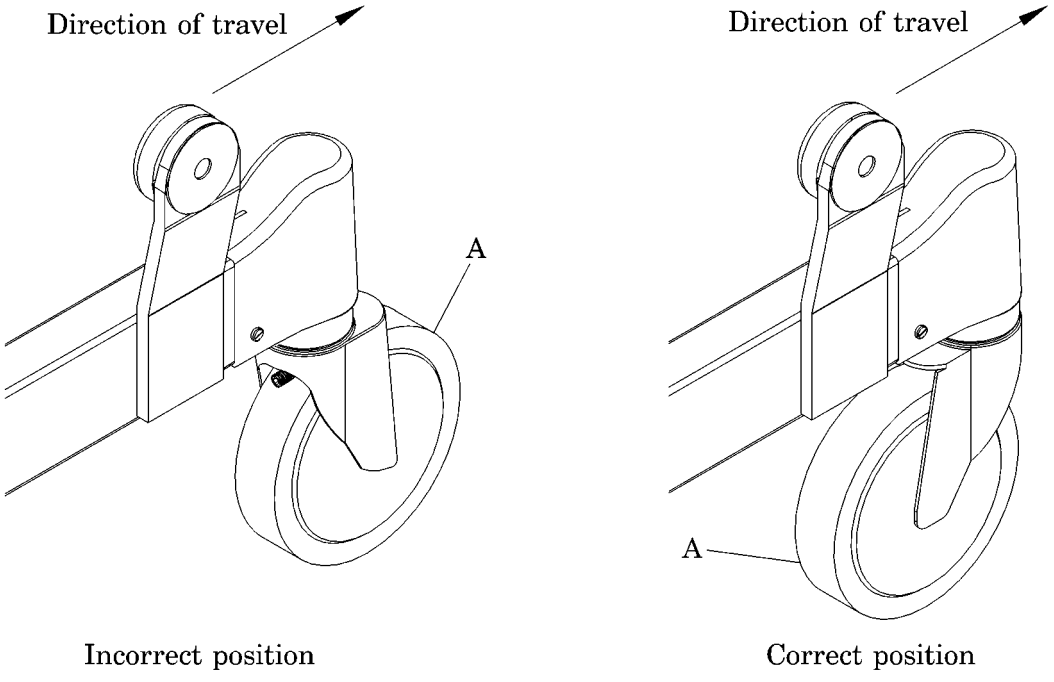
The bed is mounted on four precision-bearing swivel casters. Each caster has a molded polyurethane wheel with a diameter of 6" (15 cm) or 8" (20 cm). Wheels have precision-bearing axles and swivels for high mobility. They are easily removed for cleaning or replacing.

The caster braking system is activated by foot pedals located on either side of the bed to enable one foot to lock two casters (wheels and swivels). Activation of the steer system locks the swivel on one caster (steer lock on the foot end) to enable easy steering of the bed. The steer system is operated by foot pedals located on either side of the bed. The foot pedals are located in convenient, accessible locations on both sides of bed and are clearly identified. The brake pedal is designated by an orange dot, and the steer pedal is designated by a green dot.

Brake and Steer Pedals

Placing the brake/steer pedal in steer locks the left side, foot end caster into a position that is parallel to the bed. When transporting the bed, the caster should trail the direction of travel (see figure 1-7 on page 1-13). This trailing position is when the center of the caster's wheel axle is behind the caster stem during transport.

Figure 1-7. Steer Caster Position



WARNING:
A bed that is transported with the steer caster locked in an incorrect position can drift from side to side during transport. Personal injury or equipment damage could occur.

If the caster is leading the direction of travel, reposition it. Do this by placing the brake/steer pedal in neutral, swiveling the caster 180 degrees, and placing the brake/steer pedal back in the steer position.

Siderails, Restraints, and Patient Monitoring

The bed is equipped with head section siderails as standard equipment. They can be placed in the up or down position. In the down position, the rails store under the frame of the bed providing a *zero transfer gap* for safe surface-to-surface transfer and better patient access. The bed is configured so that the following functions may be included as part of the siderails:

- Patient and attendant head and foot actuators
- Hilow actuators (attendant only)
- Nurse call
- Entertainment center actuators (lighting, TV, UTV, and radio)
- Mattress controls

The siderails should always be in a full upright position and latched when a patient is unattended. When raising the siderails, an audible *click* indicates that the siderail is completely raised and locked in place.

We recognize that certain healthcare situations may indicate the need for specialized siderail configurations. In response to this need we offer, upon request, several siderail accessories.

Siderails are intended to be a reminder, **not a patient restraining device**. Appropriate medical personnel should determine the level of restraint necessary to ensure that a patient remains safely in bed. Consult the restraint manufacturer’s instruction for use to verify the correct application of each restraining device.

Whenever medicated or confused patients are involved, Hill-Rom recommends the following minimum actions:

- Develop guidelines for all such patients that indicate:
  - Which patients should be restrained and the appropriate restraint to utilize.
  - The proper method to monitor a patient, whether restrained or not, including time interval, visual check of restraint, etc.
- Develop training programs for all caregivers concerning the proper use and application of restraints.
- Maintain the bed at its lowest position whenever a caregiver is not in the room.

Dust Covers

All bed mechanisms are enclosed for protection from damage, aid in infection control, and patient room housekeeping efficiencies.

SideCom® Communication System

Every Affinity® Three Birthing Bed with siderail controls is pre-wired to accommodate the SideCom® Communication System. The SideCom® Communication System enables integration of the backlit nurse call, entertainment (radio and TV), and lighting in the siderails. The optional Universal TV is also available.

Nurse Call (Optional)

On Affinity® Three Birthing beds equipped with the optional nurse call feature, use the nurse call button to place a call to the nurse call system. Above the nurse call button, the call indicator light illuminates on the patient's siderail controls, indicating a call has been made.

Siderail Communication Watchdog System

Affinity® Three Birthing beds equipped with the SideCom® Communication System include a feature called the siderail communication watchdog system. It sends a nurse call if for any reason the siderail controls do not communicate properly with the bed.

Air Supply System

Major components in the air supply system include:

- Air compressor
- Manifold solenoid block
- Mattress drive circuit board
- Air mattress

Bed Positions

The Affinity® Three Birthing Bed has three sections: head, seat, and foot.

The bed positions are shown as follows:

- Trend-Like Position (see figure 1-8 on page 1-16)
- Head Position (see figure 1-9 on page 1-17)
- Foot Position (see figure 1-10 on page 1-17)
- Hilow Positions (see figure 1-11 on page 1-18)

Figure 1-8. Trend-Like Position

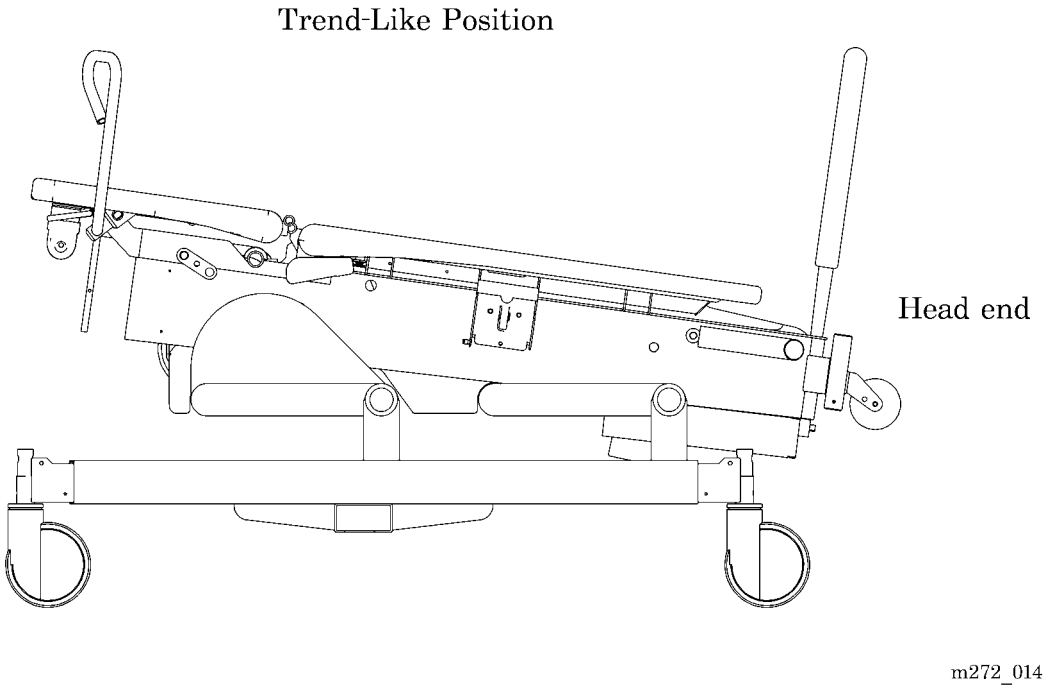


Figure 1-9. Head Position

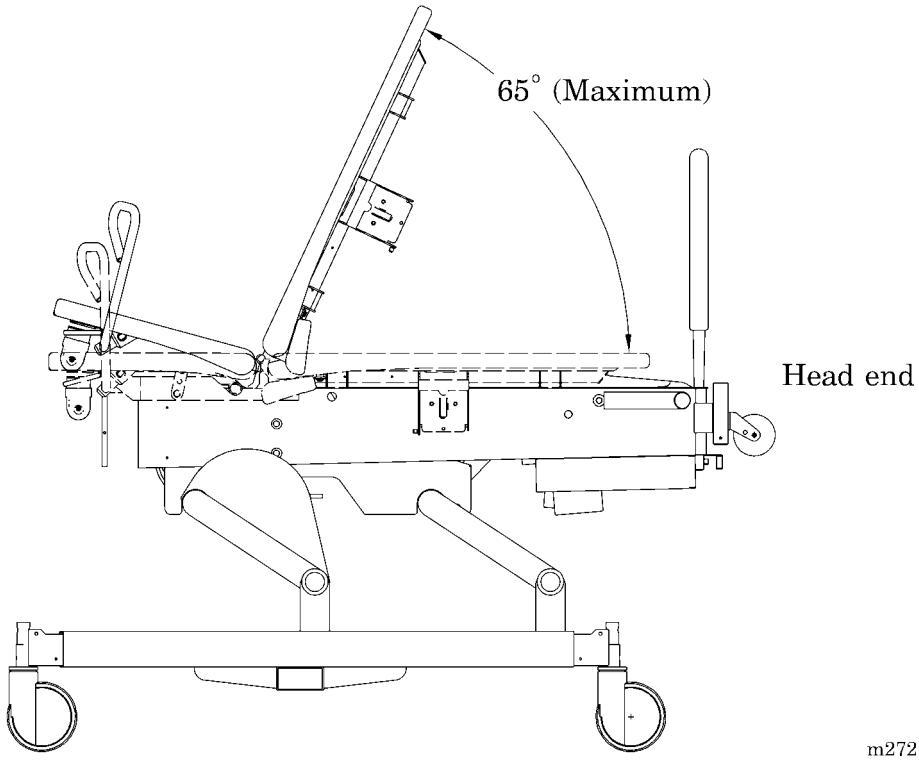


Figure 1-10. Foot Position

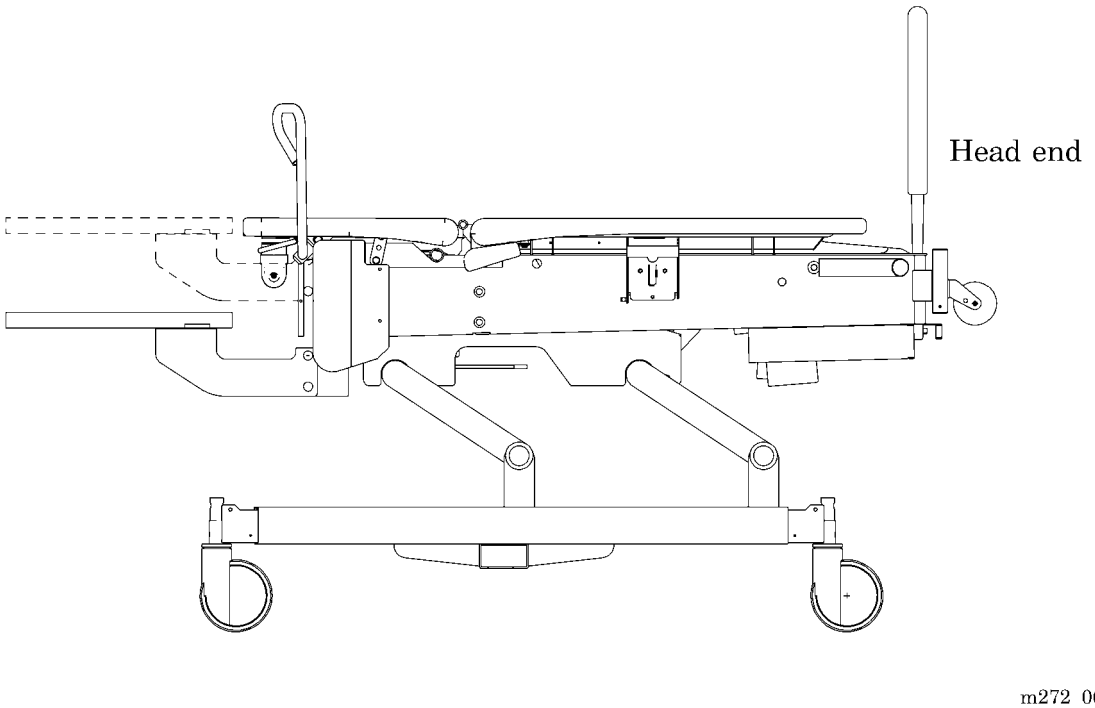
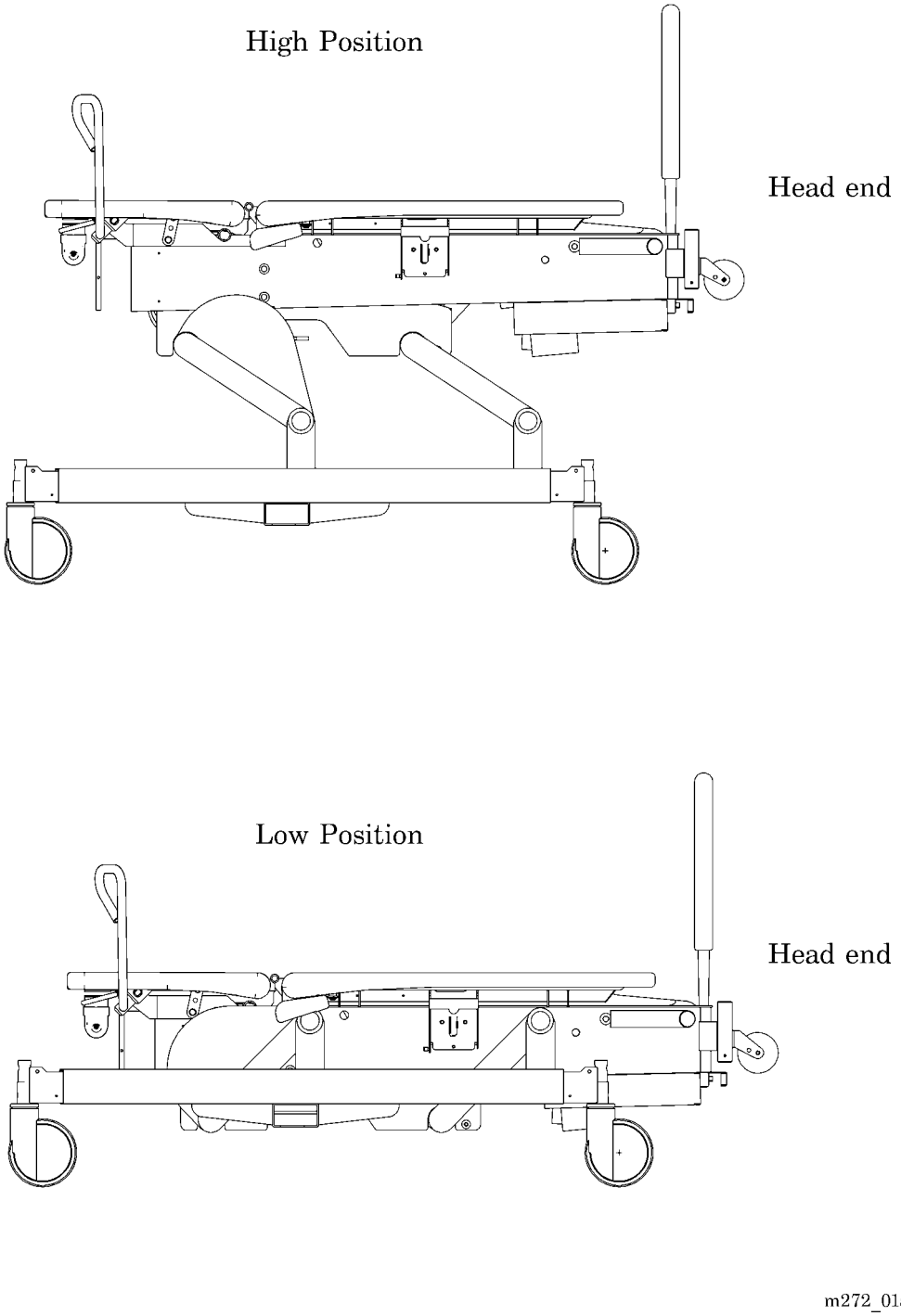


Figure 1-11. Hilow Positions



Specifications

Physical Description

For Affinity® Three Birthing Bed specifications, see table 1-1 on page 1-19.

Table 1-1. Specifications

Feature	Dimension
Total Length	90" (229 cm)
Length from roller bumpers to break in seat section	61 7/8" (157 cm)
Length from break in the seat section to end of bed	28 1/8" (71 cm)
Maximum Width (siderails stored)	36" (91 cm)
Maximum Width (siderails up)	39" (99 cm)
Maximum Headboard Height	52" (132 cm)
Maximum Siderail Height (without mattress)	14¾" (37.47 cm)
Minimum Under-Bed Clearance	5" (13 cm)
Wheel Base	50" x 29" (127 cm x 74 cm)
Mattress Width	35" (89 cm)
Mattress Length	78" (198 cm)
Mattress Thickness (head/seat)	4" (10 cm)
Mattress Thickness (foot)	3" (8 cm)
Detachable Power Cord, IEC 320/interface	US, 84" (213 cm)/international, 98" (249 cm)
Caster Size	6" (15 cm) or 8" (20 cm)
Total Weight (maximum)	480 lb (218 kg)
Head Section Inclination (maximum)	65°
Seat Section Inclination (maximum)	15°
Bed Height Range	18" (46 cm) to 34" (86 cm)
Bed Height Range (with mattress)	22" (56 cm) to 38" (97 cm)
Trend-Like position (maximum)	8°

(Continued on next page.)

Table 1-1. Specifications *(cont'd.)*

Feature	Dimension
Bed Lift capacity (maximum safe working load)	500 lb (227 kg)
Foot Section Lift capacity (maximum)	400 lb (181 kg)
Head Section Lift capacity (maximum)	200 lb (91 kg)
Maximum Height of Seat Section (in Trend-Like position)	40" (102 cm)

Table 1-2. Environmental Conditions for Transport and Storage

Condition	Range
Temperature	-40°F (-40°C) to 158°F (70°C)
Relative humidity	95% non-condensing
Pressure	15 "Hg (50 kPa) to 31 "Hg (106 kPa)

Table 1-3. Environmental Conditions for Use

Condition	Range
Temperature	59°F (15°C) to 104°F (40°C) ambient temperature
Relative humidity range	10% to 85% non-condensing

Electrical Description

Table 1-4. Mains Power Requirements

Condition	Range
Rated voltage	120V AC/230V AC
Power/input	4 A/2 A
Frequency	50/60 Hz

Table 1-5. Fuse Specifications

Condition	Range
Air system fuse (air system optional)	2 A, 250 V~, 5 x 20 mm, UL 198G Fast Acting
Battery fuse	10 A, 32 V~, ATO
Mains fuses (120 V bed model)	4 A, 125 V~, 5 x 20 mm, UL 198G Slo-Blo®[a] or equivalent
Mains fuses (230 V bed model)	2 A, 250 V~, 5 x 20 mm, IEC127 Sheet III, Time Delay

a. Slo-Blo® is a registered trademark of Littelfuse, Inc.

Table 1-6. Auxiliary Outlet Power Specifications

Condition	Range
Auxiliary outlets	12V AC, 20W per outlet, electrically isolated from earth ground

Table 1-7. Electrical Leakage

Condition	Range
Ground resistance	< 0.20Ω
Leakage current	< 100µA for 120V models < 150µA for 230V models

The electrical power system is insulated from the metal parts of the bed. No additional electrical components, such as isolation transformers, are required to make this bed meet applicable electrical codes. All patient support surfaces are fully grounded through a three-wire power cord having a hospital-grade, 3-prong, grounded plug.

Each bed is factory-tested for complete operation with and without a load. Each bed is tested for insulation integrity and micro-current leakage.

All electrical components of this bed have been approved by Underwriters Laboratories Inc.®[1] (UL) and Canadian Standards Association (CSA®[2]) for this application.

1. Underwriters Laboratories Inc.® is a registered trademark of Underwriters Laboratories Inc.
2. CSA® is a registered trademark of Canadian Standards Association

Automatic Night Light

The bed is equipped with a night light that automatically activates as the ambient light decreases. The light illuminates the foot fall area under the bed.

Siderail Controls

Patients and attendants operate the various functions of this bed by means of finger-touch switches located in a convenient fixed position on the siderails at both sides of the bed. These controls move with the head section for easy access and visual contact regardless of the head section elevation. The control switches are electronically interlocked to prevent electrical damage to the motor caused by contradictory direction signaling.

Head

Head section operating controls, identified by graphic symbols, are visible and accessible to both the patient and the attendant. The up/down travel of the head section is controlled by separate momentary type switches.

Foot

Foot section operating controls, identified by graphic symbols, are visible and accessible to both the patient and the attendant. The up/down travel of the foot section is controlled by separate momentary type switches.

On the original version of the bed, the foot section travel pauses when it reaches the flat or bed level position, indicating the bed is in the level position. Travel then proceeds to the desired position if the foot section switch remains actuated. The new version of the bed does not have this pause feature.

Hilow

The hilow controls, identified by graphic symbols, are visible and accessible only to the nurse/attendant. The up/down travel of the sleep deck is controlled by separate momentary type switches.

Lockout

This bed has the capability of locking out the inboard and outboard hilow, head, and foot functions if so prescribed by the attending physician. The lockout switch is located at the head end of the bed's main frame. The lockout function interrupts the patient/attendant siderail controls until the lockout switch is turned off.

P.C. Boards

All P.C. board functions are tested at the completion of circuit board assembly and at final bed assembly. A line transient filter is included to protect the boards from excessive line surges.

Regulations, Standards, and Codes

The Affinity® Three Birthing Bed is designed and manufactured according to equipment classifications and the standards in table 1-8 on page 1-23.

Table 1-8. Regulations, Standards, and Codes

Technical and Quality Assurance Standards	EN 60601-1 and amendments UL 2601-1 CSA C22.2 No. 601.1 IEC 60601-2-38 IEC 60601-1-2 EN ISO 9001 and EN 46001
Equipment Classifications per EN 60601-1	Class I equipment, internally powered equipment
Degree of Protection Against Electric Shock of the Applied Part	Type B
Degree of Protection Against Ingress of Water	IPX2
Degree of Protection Against the Presence of Flammable Anaesthetic Mixtures	Ordinary equipment, not for use in a flammable atmosphere
Mode of Operation	Continuous operation with intermittent loading, 3 minutes ON/30 minutes OFF
Classification according to Directive 93/42/EEC	Class I

Model Identification

For Affinity® Three Birthing Bed model identification, see table 1-9 on page 1-23.

Table 1-9. Model Identification

Model Number	Description
P3700	Affinity® Three Birthing Bed

Safety Tips

Train and educate your staff on the hazards associated with electric beds. Do not allow personnel to have their entire body below the sleep surface and within the confines of the bed. Unplug the bed from its power source and engage the lockout control prior to cleaning or servicing it. If service personnel need to get under the bed, they must block up the hilow portion as an added precaution. Ensure that the foot section is properly mounted to the yoke.

We urge you to incorporate these safety tips into your procedures for the safety of both patients and staff.

Bed Position

To reduce the severity of falls by patients, always leave the bed in the low position when the patient is unattended.

Siderails

Leave the siderails fully up and locked when the patient is left unattended. When raising the siderails, be sure that you hear the click that signals the up and locked condition. Give the siderails a tug to check that they are firmly in position.

Siderails are intended as a reminder, not a restraint device. Appropriate medical personnel should determine the level of restraint necessary to ensure a patient remains safely in bed.

Brake and Steer Pedals

Always keep the casters in the brake position when the bed is occupied. Patients often use the bed for support when getting in or out of bed, and serious injuries can result if the bed moves. After brakes are set, rock the bed gently to ensure that they are locked.

Put the casters in the steer mode when moving the bed. This will make the bed easier to position or transport.

Fluids

When massive spills occur in the area of the P.C. boards, motors, or transformers, immediately:

1. Unplug the bed from its power source.
2. Take care of the patient.
3. Clean the fluid from the bed.
4. Have maintenance check out the bed completely. Fluids can short out controls, making the bed inoperable or cause the bed to operate erratically. Component failure caused by fluids can even cause the bed to operate without warning, causing injury.
5. Do not place the bed back into service until it is unquestionably dry and tested safe to operate.

Water Mattress

The excessive weight associated with water mattresses puts an undue stress on the motor drives. In most cases, the patient's weight plus the water mattress weight exceeds the recommended bed capacity. Even more important is the fact that water mattresses are subject to rupture, which would allow large amounts of water to come into contact with the electrical components of the bed. We recommend not using water mattresses.

Lockout Switch

Whenever a patient or visitor should be restricted from operating the siderail controls, activate the lockout switch located at the head end of the bed (on the main frame). The lockout switch is for the convenience of the staff and the safety of the patient. Use the lockout switch when appropriate.

CPR Release

Only healthcare professionals should use the emergency CPR release. The two release handles are located under the head section of the bed near the seat section.

To activate the CPR release, pull the handle away from the bed. Continue to pull out on the handle until the head section is flat. When this is complete, attend to the patient. The bed will automatically flatten the head and seat sections and reset itself to be ready to use after the emergency.

WARNING:
A bed that is transported with the steer caster locked in an incorrect position can drift from side to side during transport. Personal injury or equipment damage could occur.

WARNING:
Only facility-authorized maintenance personnel should troubleshoot the Affinity® Three Birthing Bed. Troubleshooting by unauthorized personnel could result in personal injury or equipment damage.

WARNING:
Unplug the bed from its power source and disconnect the battery back-up before checking ohms/resistance measurements. Failure to disconnect line voltage to the bed can damage the VOM and cause equipment damage or personal injury.

WARNING:
Refer to your VOM owner's manual for complete and detailed information regarding the operation of your VOM. Failure to do so could result in personal injury or equipment damage.

WARNING:
You must use the 2" x 4" pieces of lumber to support the bed. The bed will fall during this procedure if not supported. Failure to do so could result in personal injury or equipment damage.

WARNING:
Prop up the head section before removing the cotter pins and clevis pins. Failure to do so could result in personal injury or equipment damage.

WARNING:
You must use the 2" x 4" pieces of lumber to support the foot yoke. The foot yoke will fall during this procedure if not supported. Failure to do so could result in personal injury or equipment damage.

WARNING:
The head end of the main frame is supported by the two Trend-Like position gas springs. Any servicing will require that a support device be placed just beneath the head end of the main frame. Failure to do so could result in personal injury or equipment damage.

WARNING:
Do not attempt to remove the gas spring with the head section fully raised and the spring compressed. Lower the head section until the cylinder of the gas spring is free in the slide bracket of the main frame, and support the head section securely before removing the cotter pins and clevis pins. Failure to do so could result in personal injury or equipment damage.

WARNING:
Failure to properly mount the foot section to the yoke latches could result in equipment damage or personal injury.

WARNING:
Failure to properly mount the foot section to the yoke slide brackets could result in equipment damage or personal injury.

WARNING:
Adhere to all electrical safety precautions when servicing the bed's electrical system. Failure to do so could result in personal injury or equipment damage.

WARNING:
Ensure that the bed is stable before removing the caster. Failure to do so could result in personal injury or equipment damage.

WARNING:
Follow the product manufacturer’s instructions. Failure to do so could result in personal injury or equipment damage.

WARNING:
Adhere to the *Infection Control Policies and Procedures* from Hill-Rom. Failure to do so could result in the spread of infection.

WARNING:
Powered bed mechanisms can cause serious injury. Operate the bed only with persons clear of mechanisms. Failure to do so could result in personal injury or equipment damage.

WARNING:
Unplug the bed from its power source and engage the lockout control during routine maintenance or cleaning. Refer to the *Affinity® Three Birthing Bed User Manual* and specific sections in this service manual for additional precautions. Failure to do so could result in personal injury or equipment damage.

WARNING:
Ensure that all electrical/mechanical loads are removed prior to maintenance/repair of the bed's drive system or other mechanical assemblies. Failure to do so could result in personal injury or equipment damage.

WARNING:
Visually inspect the bushings annually. If wear is apparent, replace them. Failure to do so could result in personal injury or equipment damage.

WARNING:
Only facility-authorized personnel should perform preventive maintenance on the Affinity® Three Birthing Bed. Preventive maintenance performed by unauthorized personnel could result in personal injury or equipment damage.

WARNING:
Inspect the pivot point fasteners semi-annually. Failure to do so could result in personal injury or equipment damage.

WARNING:
Use primers with adequate ventilation. Avoid skin contact and prolonged or repeated breathing of vapors. Do not allow primers to be trapped under rings, watch bands, etc. Observe all directions on the primer can. Failure to do so could result in personal injury.

WARNING:
Avoid excessive or repeated skin contact with the liquid. Repeated contact with the liquid could result in personal injury.

WARNING:
The labor bar is intended to be used in the prescribed manner only. Failure to use this product as outlined may result in personal injury or equipment damage.

WARNING:
Insufficient tightening will allow the cradles to slip and lose their original position. Personal injury could occur.

WARNING:
The supports are intended to be used in the prescribed manner only. Failure to use this product as outlined may result in personal injury or equipment damage.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

SHOCK HAZARD:
The voltage in the electrical system presents an electrical shock hazard. Perform standard electrical service procedures before attempting service within the P.C. board enclosure. Adhere to all electrical safety precautions when servicing the bed's electrical system. Failure to do so could result in personal injury or equipment damage.

SHOCK HAZARD:
Do not expose the unit to excessive moisture which would allow liquid to pool. Personal injury or equipment damage could occur.

CAUTION:
Remove the battery if the bed will not be in service for extended periods of time. Failure to do so could result in damage to the life of the battery, or damage to the bed. Contact the appropriate maintenance personnel.

CAUTION:
Do not position the head of the bed against a wall or beneath any fixtures. This is to prevent damage due to the arcing motion of the bed while the bed is being raised and lowered.

CAUTION:
Ensure that the night light is not damaged when the bed is being lowered. Failure to do so could result in equipment damage.

CAUTION:
Do not pull on the mattress material when unfastening the mattress retaining snaps. Unfasten the mattress retaining snaps at the snap location. Failure to do so could result in equipment damage.

CAUTION:
Ensure that the fuse housing is properly oriented for the voltage rating (110-120V or 220-240V) on the bed that you are servicing. Failure to do so could result in equipment damage.

CAUTION:
Do not cut or remove the cable ties that secure the battery leads to the electronics pan. This ensures the proper connection of the batteries during the replacement procedure. Possible equipment damage could occur if the cable ties are removed.

CAUTION:
To prevent component damage, ensure that your hands are clean, and **only** handle a P.C. board by its edges. Failure to do so could result in equipment damage.

CAUTION:
For shipping and storage, place the removed P.C. board in an antistatic protective bag. Failure to do so could result in equipment damage.

CAUTION:
Support the siderail during the removal procedure. Failure to do so could result in equipment damage.

CAUTION:
Ensure that the siderail does not drop when the pins are removed. Failure to do so could result in damage to the wiring going to the siderail.

CAUTION:
Do not use harsh cleansers or detergents such as scouring pads and heavy-duty grease removers, or solvents such as toluene, xylene, and acetone. Equipment damage could occur.

CAUTION:
Ensure that the metal platform is dry before placing the mattress back onto the bed. Failure to do so could result in equipment damage.

CAUTION:
Mattress damage caused by improper draping and/or cleaning procedures is not covered by warranty.

CAUTION:
Standard OB packs and paper drapes will not keep the sheets dry.

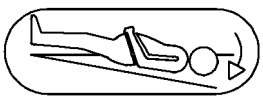
CAUTION:
When handling electronic components, wear an antistatic strap. Failure to do so could result in component damage.

CAUTION:
Do not use silicone-based lubricants. Equipment damage could occur.

Product Symbol Definitions

For Affinity® Three Birthing Bed symbol definitions, see table 1-10 on page 1-32.

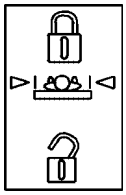
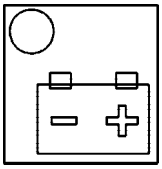
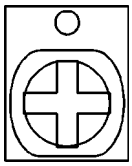
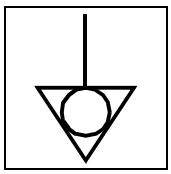
Table 1-10. Product Symbol Definitions

Symbol	Description
	Type B applied part according to EN 60601-1.
IPX2	According to IEC 529
	CAUTION: Consult accompanying documents.
	Conforms to the European Medical Device Directive 93/42/EEC.
	Certified by Underwriters Laboratories Inc.®[a] in accordance with UL2601-1, CAN/CSA C22.2 NO.601.1, EN 60601-1, IEC 601-2-38 and IEC 601-1-2.
	Approval mark from VDE Prüf-und-Zertifizierungsinstitut in accordance with EN 60601-1, IEC 601-2-38, and IEC 601-1-2.
	CPR function—Identifies the release lever that can be used to manually drop the inclined head section, so that cardiopulmonary resuscitation can be performed without delay.
	Trend-Like function

a. Underwriters Laboratories Inc.® is a registered trademark of Underwriters Laboratories Inc.

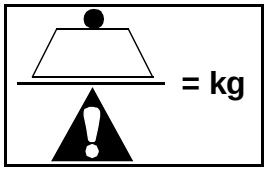
(Continued on next page.)

Table 1-10. Product Symbol Definitions *(cont'd)*

Symbol	Description
	Lockout control label—The switch in the up position indicates the lockout control is **on**. The switch in the down position indicates the lockout control is **off**.
	Lockout control status—when the lockout control status light is on, the lockout function is activated.
	Battery charge status
	Nurse call
	Identifying mains fuse
	Alternating current
	Equipotentiality

(Continued on next page.)

Table 1-10. Product Symbol Definitions *(cont'd)*

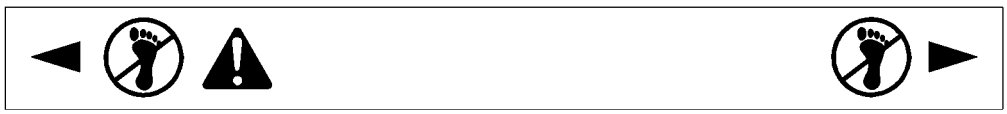
Symbol	Description
	Safe working load
	Electric shock hazard
	Keep feet clear of this area. Potential for injury.

Warning and Caution Labels

Figure 1-12. Warning and Caution Labels (Sheet 1 of 3)

45836

45836-00



(Warning symbol, keep feet clear)

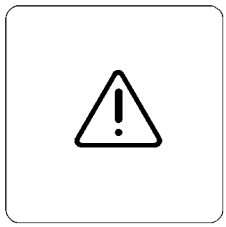
45832

45832-00

(Warning symbol, danger is present)

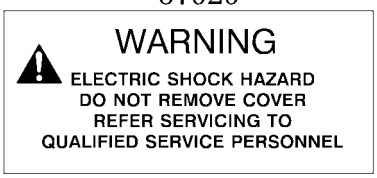
45834

45834-00



(Warning symbol, danger is present)

67020



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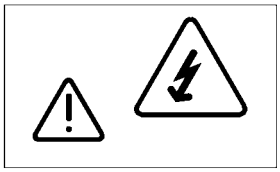


(Warning symbol, electric shock hazard)

m272a007

Figure 1-13. Warning and Caution Labels (Sheet 2 of 3)

65833

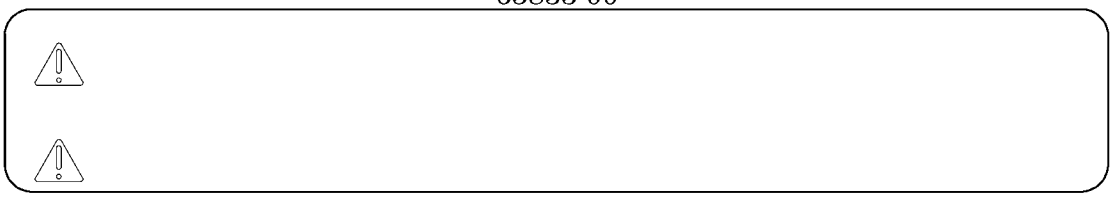
WARNING — POWERED BED MECHANISMS CAN CAUSE SERIOUS INJURY. OPERATE BED ONLY WITH PERSONS CLEAR OF MECHANISMS.

CAUTION — UNPLUG BED DURING SERVICE OR CLEANING. REFER TO SERVICE MANUAL AND IN-SERVICE MANUAL FOR ADDITIONAL PRECAUTIONS.

CAUTION; USE OXYGEN ADMINISTERING EQUIPMENT OF THE NASAL, MASK OR VENTILATOR TYPES.

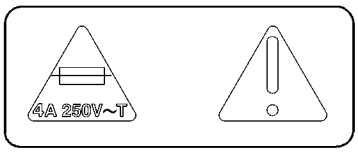
CAUTION; EXTERNAL CIRCUITS PROVIDED BY HOSPITAL FACILITIES AND INTERFACING WITH SIDECOM, HAVE NOT BEEN INVESTIGATED BY UL. PERIODIC TESTS OF LEAKAGE CURRENT SHOULD BE PREFORMED ON THESE CIRCUITS TO VERIFY VALUES ARE WITHIN SAFE AND ACCEPTABLE LIMITS FOR LOCATION OF USE.

65833-00

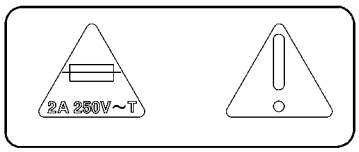


(International)

65831

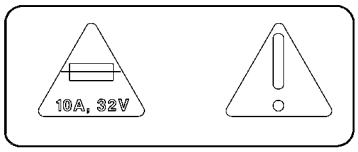


65831-01



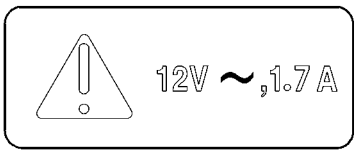
(International)

65831-02

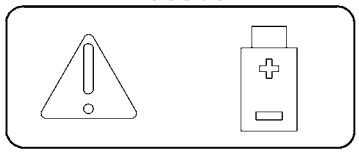


(Autofuse)

65832



66870



(Battery, Caution)

63609

WARNING

FOOT SECTION MUST BE LOCKED IN PLACE.
PULL TO ENSURE LATCH IS ENGAGED.

63609-00

(Warning symbol, foot section must be locked in place)

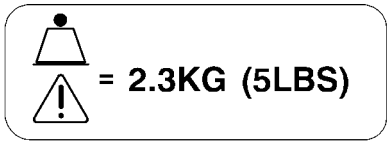
67091

WARNING

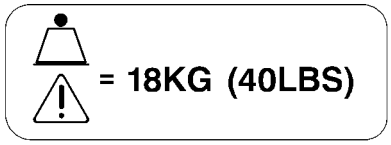
PROPER GROUNDING IS ACHIEVED ONLY WHEN BED IS CONNECTED TO "HOSPITAL GRADE RECEPTACLE"

m272a006

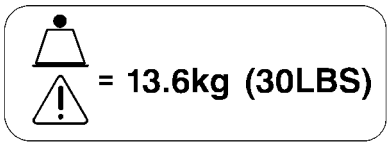
Figure 1-14. Warning and Caution Labels (Sheet 3 of 3)



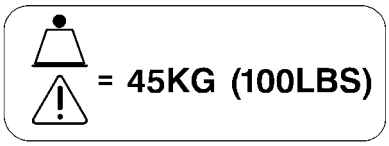
67090-01 Anesthesia Screen



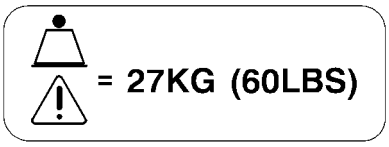
67090-07 Infusion Support System



67090-02 Arm Board

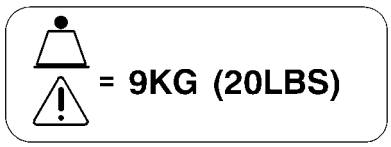


67090-08 Labor Bar

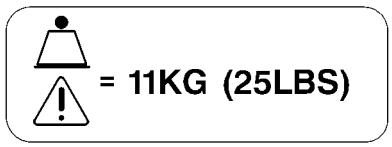


67090-03 Attached Calf Support

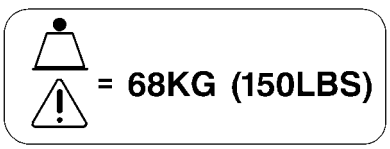
67090-09 Oxygen Tank Holder



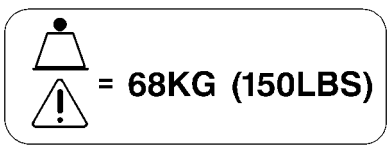
67090-04 Foley Hook Kit



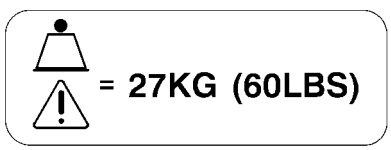
67090-10 Permanent IV Pole



67090-05 Foot Rest Bar



67090-11 Foot Supports



67090-06 Full Leg Supports

m272a008

NOTES:

Chapter 2
Troubleshooting Procedures

2

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Getting Started

WARNING:
Only facility-authorized personnel should troubleshoot the Affinity® Three Birthing Bed. Troubleshooting by unauthorized personnel could result in personal injury or equipment damage.

Begin each procedure in this chapter with step 1. Follow the sequence outlined (each step assumes the previous step has been completed). In each step, the normal operation of the product can be confirmed by answering **Yes** or **No** to the statement. Your response will lead to another step in the procedure, a repair analysis procedure (RAP), or a component replacement. If more than one component is listed, replace them in the given order.

To begin gathering information about the problem, start with **Initial Actions**.

To isolate or identify a problem and to verify the repair after completing each corrective action (replacing or adjusting a part, seating a connector, etc.), perform the **Function Checks**.

To verify the repair, perform the **Final Actions** after the Function Checks.

If troubleshooting procedures do not isolate the problem, call Hill-Rom Technical Support at (800) 445-3720 for assistance.

Test Equipment

You will need a digital or analog multimeter (VOM) with fine tip probes to troubleshoot the Affinity® Three Birthing Bed.

WARNING:
Refer to your VOM owner's manual for complete and detailed information regarding the operation of your VOM. Failure to do so could result in personal injury or equipment damage.

Figure 2-1 on page 2-4 represents a common digital VOM. The three basic electrical functions that you will test are alternating current (AC), direct current (DC), and ohms/resistance.

Figure 2-1. VOM

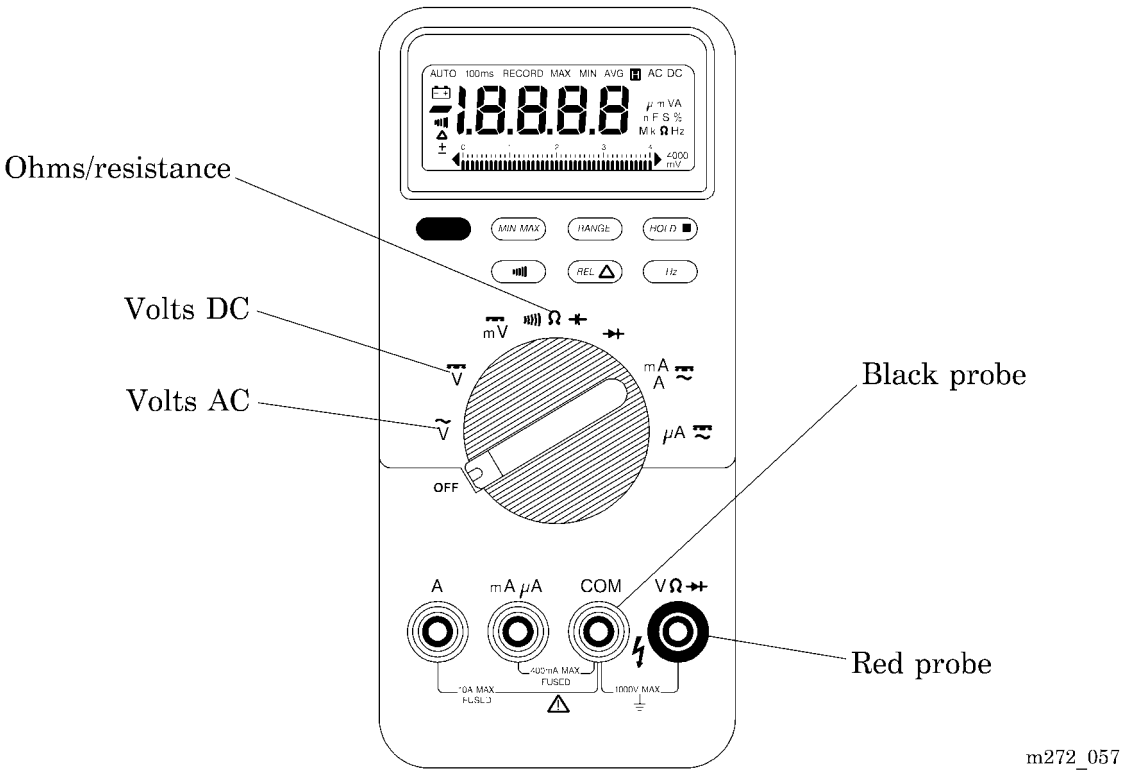


Figure 2-1 on page 2-4 displays the correct connection for the fine tip probes. The red probe plugs into the port marked "V Ω." The black probe plugs into the port marked "COM." The troubleshooting repair analysis procedure (RAP) indicates where on the bed to connect the red probe and black probe.

WARNING:
Unplug the bed from its power source and disconnect the battery back-up before checking ohms/resistance measurements. Failure to disconnect line voltage to the bed can damage the VOM and cause equipment damage or personal injury.

Initial Actions

To gather information from operators concerning problems with the Affinity® Three Birthing Bed, use Initial Actions. Note symptoms or other information concerning the problem that the operator describes. This information helps identify the probable cause.

1. Someone who can explain the problem is available.

   Yes **No**
   ↓ → Go to "Function Checks" on page 2-6.

2. Ask that person to demonstrate or explain the problem. The problem can be duplicated.

   Yes **No**
   ↓ → Go to "Function Checks" on page 2-6.

3. The problem is a result of improper operator action.

   Yes **No**
   ↓ → Go to "Function Checks" on page 2-6.

4. Instruct the operator to refer to the procedures in the *Affinity® Three Birthing Bed User Manual*. To ensure proper operation of the Affinity® Three Birthing Bed, perform the "Function Checks" on page 2-6.

Quick Reference Problem/Solution Matrix

If a problem with the bed system is readily identified, use table 2-1 on page 2-6 to quickly go to the applicable troubleshooting procedure. If the problem is not readily identified, go to "Function Checks" on page 2-6.

Table 2-1. Quick Reference Problem/Solution Matrix

Problem	Solution
Hilow Drive Operation Failures	RAP 2.1
Hilow Up Malfunction	RAP 2.2
Hilow Down Malfunction	RAP 2.3
Head Drive Operation Failures	RAP 2.4
Head Up Malfunction	RAP 2.5
Head Down Malfunction	RAP 2.6
Foot Drive Operation Failures	RAP 2.7
Foot Up Malfunction	RAP 2.8
Foot Down Malfunction	RAP 2.9
Hilow Up Malfunction (When The Foot Section Is Lowered)	RAP 2.10
Brake Caster Malfunction	RAP 2.11
Bed Air Surface Malfunction	RAP 2.12
Night Light Does Not Illuminate	RAP 2.13
Siderail Mechanism Does Not Hold	RAP 2.14
Trend-Like Position Malfunction	RAP 2.15
Battery Backup Malfunction	RAP 2.16
CPR Release Malfunction	RAP 2.17

Function Checks

Function checks determine whether the Affinity® Three Birthing Bed is operating properly. All caregiver control panel functions are available from both the right and left siderails. When checking redundant function controls, activate each of the siderails to determine if the fault is contained in one or both of the siderails.

1. Initial Actions have been performed.

   Yes **No**
   ↓ → Go to “Initial Actions” on page 2-5.

2. The bed is plugged into an appropriate power source.

   Yes **No**
   ↓ → Plug the bed into an appropriate power source.

3. The lockout switch is in the “ON” (unlocked) position before proceeding with the function checks.

   Yes **No**
   ↓ → Place the lockout switch in the “ON” (unlocked) position. Go to step 4.

4. Inspect the siderail cable connections to the logic control P.C. board cable. The cables are connected properly.

   Yes **No**
   ↓ → Connect the siderail cable to the cable from the logic control P.C. board. Go to step 5.

5. Visually inspect the bed for loose connections on cable assemblies and electrical wires. All cable connections and wiring are properly secured.

   Yes **No**
   ↓ → Secure the cable connections and wiring. Go to step 6.

6. Inspect the Affinity® Three Birthing Bed for signs of obvious damage. The Affinity® Three Birthing Bed appears to be all right.

   Yes **No**
   ↓ → Repair the damage, and proceed to the section, “Hilow System Functional Check” on page 2-7.

Hilow System Functional Check

1. Use the bed function controls to place the bed in the following positions:
   - Position the bed in the mid-height position with the hilow function.
   - Raise the foot section to the high position with the foot function.
   - Lower the head to the low position with the head function.
   - Ensure that the bed is out of the Trend-Like position (the sleep surface is level).

2. Momentarily activate the hilow up switch. The bed rises.

   Yes **No**
   ↓ → Go to RAP 2.2.

3. Momentarily activate the hilow down switch. The bed lowers.

   Yes **No**
   ↓ → Go to RAP 2.3.

4. Activate the hilow up and down switch. The hilow motor is free of excessive noise or any mechanical binding/grinding.

   Yes **No**
   ↓ → Go to RAP 2.1.

5. Raise, and then lower the sleep surface using the hilow function. The bed sleep surface stops and does not drift downward or coast.

   Yes **No**
   ↓ → Go to RAP 2.1.

6. Raise the bed to the high position using the hilow function. Determine the hilow up limit setting by measuring at the side of the bed from the floor to the top of the mainframe (see figure 4-5 on page 4-14). The hilow limit (LBU) measurement is 31" ± ½" (79 cm ± 12.7 mm).

   Yes **No**
   ↓ → Adjust the hilow limit switch (LBU) (refer to procedure 4.4). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

7. Lower the bed to the low position using the hilow function. The bed stops at the (LBD) limit stop. The bed height is 16" ± ½" (41 cm ± 12.7 mm).

   Yes **No**
   ↓ → Adjust the hilow limit switch (LBD) (refer to procedure 4.4). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

Trend-Like Position Functional Check

1. Position the bed into a mid height position with the hilow function. Activate the Trend-Like position release handle at the head end of the bed, and place the bed in and out of the Trend-Like position. The bed goes in and out of Trend-Like position smoothly, and the sleep surface is secure when the handle is released:

   Yes **No**
   ↓ → Adjust the Trend-Like position sensing switch (refer to procedure 4.9). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

Head System Functional Check

1. Ensure that the sleep surface is level, and place the bed in the following positions:
   - Place the bed in a mid-height position with the hilow function.
   - Place the head section in a mid-height position with the head function.
2. Momentarily activate the head up switch. The head section rises.

   Yes **No**
   ↓ → Go to RAP 2.5.
3. Momentarily activate the head down switch. The head section lowers.

   Yes **No**
   ↓ → Go to RAP 2.6.
4. Activate the head up or down switch. The head motor is free of excessive noise or any mechanical binding/grinding.

   Yes **No**
   ↓ → Go to RAP 2.4.
5. Raise the head section to the high position with the head up switch. Note the position of the sleep surface. The head section stops and does not drift downward or coast.

   Yes **No**
   ↓ → Go to RAP 2.4.
6. Raise the head section to the high position with the head up switch. Evenly distribute a maximum of 50 lb (23 kg) of weight on the head section of the sleep surface simulating a 50 lb (23 kg) patient. Activate the CPR function by pulling the CPR release lever located at the side of the bed. The head section lowers to a flat position within approximately 7 seconds.

   Yes **No**
   ↓ → Adjust the CPR release cables (refer to procedure 4.8). If this solves the problem, go to “Final Actions” on page 2-12. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

Foot System Functional Check

1. Place the bed in the following positions:
   - Position the bed in the mid-height position with the hilow function.
   - Use the foot function to raise the foot section until the mattress is level with the seat section mattress.
   - Lower the head section to the low position with the head function.
   - Ensure that the bed is out of the Trend-Like position (the sleep surface is level).

2. Press the foot up switch, and activate the foot section. The foot section rises when the foot up switch is activated.

   Yes **No**
   ↓ → Go to RAP 2.8.

3. Press the foot down switch. The foot section lowers when the foot down switch is activated.

   Yes **No**
   ↓ → Go to RAP 2.9.

4. Raise the foot section to the high position using the foot up switch. The top of the foot section stops approximately 2-1/2" (6.35 cm) above the seat section.

   Yes **No**
   ↓ → Adjust the foot limit switch (refer to procedure 4.7). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

5. Lower the foot section to the low position with the foot down switch. The foot drive stops when the foot lift arm is 1/4" (6.4 mm) above the foot end hilow lift arm (see figure 4-9 on page 4-23).

   Yes **No**
   ↓ → Adjust the foot limit switch (refer to procedure 4.7). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

6. Lower the bed to the low position with the hilow down switch. Lower the foot section with the foot down switch. The bed automatically rises from the low position.

   Yes **No**
   ↓ → Go to RAP 2.10.

7. Activate the foot up or down switch. The foot motor is free of excessive noise or any mechanical binding/grinding.

   Yes **No**
   ↓ → Go to RAP 2.7.

Air System Functional Check

1. Press the seat inflate button, and activate the bed air surface. The seat section mattress inflates.

   Yes **No**
   ↓ → Go to RAP 2.12.

2. Press and hold the seat deflate button, and activate the bed air surface. The seat section mattress deflates.

   Yes **No**
   ↓ → Go to RAP 2.12.

3. Press the back inflate button, and activate the bed air surface. The lumbar section inflates.

   Yes **No**
   ↓ → Go to RAP 2.12.

4. Press the back deflate button to activate the bed air surface. The lumbar section deflates.

   Yes **No**
   ↓ → Go to RAP 2.12.

Other Affinity® Three Birthing Bed Functional Checks

1. The lockout switch locks out the designated inboard/outboard controls when placed in the “OFF” position (locked), and enables the functions when placed in the “ON” position (unlocked). The lockout functions work properly.

   Yes **No**
   ↓ → Replace the faulty rocker switch (refer to procedure 4.27). If this solves the problem, go to “Final Actions” on page 2-12. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

2. Operate all radio, TV, nurse call, and lighting functions in both siderails. All functions operate properly.

   Yes **No**
   ↓ → Replace the P.C. switch board containing the faulty function(s) for caregiver controls (refer to procedure 4.30), or for patient controls (refer to procedure 4.29). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

3. Perform the brake/steer performance check. Place the brake steer pedal into the brake position and then the steer position. The brake and steer functions operate properly.

   Yes **No**
   ↓ → Go to RAP 2.11, and adjust the brake and steer functions (refer to procedure 4.31). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

4. Operate the labor grips on both sides of the bed. The labor grips latch when in the full up position and then release when the release handle is activated.

   Yes **No**
   ↓ → Replace the faulty labor grips (refer to procedure 4.15).

5. Operate the siderail latching mechanism by raising and then lowering the siderail. The siderail latches when in the full up position and lowers slowly when the release handle is activated and allowed to free fall.

   Yes **No**
   ↓ → Replace the faulty siderail assembly (refer to procedure 4.28).

6. Unplug the bed from its power source, and verify that the battery back-up is operating properly by activating bed functions. The battery back-up provides sufficient power to operate the bed functions.

   Yes **No**
   ↓ → Go to RAP 2.16.

7. Go to "Final Actions" on page 2-12.

Final Actions

1. Complete the required preventive maintenance procedures. See "Preventive Maintenance Checklist" on page 6-8.

2. Complete all required administrative tasks.

2.1 Hilow Drive Operation Failures

The hilow motor runs, but other problems with the motor are suspected (i.e., it is noisy, it drifts, etc.).

1. Raise and lower the bed with the hilow function. Look for evidence of physical damage to the drive system (i.e., check for a bent motor shaft, loose metal, etc.). The drive system passes inspection.

   Yes **No**
   ↓ → Replace the hilow motor (refer to procedure 4.3). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 2.

2. Inspect the mounting clevis pins and cotter pins on the hilow motor drive. The clevis pins are installed properly.

   Yes **No**
   ↓ → Install the hilow motor clevis pins properly to secure the hilow motor to the bed frame. If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 3.

3. Raise and lower the bed under a load condition. The hilow drive runs quietly.

   Yes **No**
   ↓ → Inspect for damage to the hilow motor. Replace if necessary (refer to procedure 4.3). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 4.

4. Using the hilow function, raise and lower the bed. The hilow motor retains its position, and does not drift or coast.

   Yes **No**
   ↓ → Replace the hilow motor (refer to procedure 4.3). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

5. Go to "Final Actions" on page 2-12.

2.2 Hilow Up Malfunction

The hilow motor does not raise the bed when the hilow up switch is activated.

1. The bed is plugged into the appropriate power source, and the lockout switch is **off.**

   Yes **No**
   ↓ → Plug the bed into an appropriate power source and turn the lockout switch off. If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 2.

2. Activate the hilow up switch on the opposite siderail. The hilow motor runs.

   Yes **No**
   ↓ → Go to step 4.

3. Activate another bed function switch on the siderail with the non-functioning hilow up switch. The other bed functions work properly.

   Yes **No**
   ↓ → Replace the P.C. switch board containing the faulty function(s) for caregiver controls (refer to procedure 4.30) or for patient controls (refer to procedure 4.29). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 4.

4. Activate the hilow up switch, and listen for an audible relay click. An audible clicking sound can be heard.

   Yes **No**
   ↓ → Replace the logic control P.C. board (refer to procedure 4.23). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 5.

5. Allow the hilow motor to cool. Activate the hilow motor up switch. The hilow motor runs.

   Yes **No**
   ↓ → Replace the hilow motor (refer to procedure 4.3). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 7.

6. Go to "Final Actions" on page 2-12.

7. Set your VOM to measure V DC. At the logic control P.C. board connector P15, place your black probe into pin 1 (black wire) and your red probe into pin 2 (blue wire). Press the hilow up switch. The voltage is between 25V DC and 30V DC.

   Yes **No**
   ↓ → Replace the logic control P.C. board (refer to procedure 4.23). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 8.

8. Replace the hilow motor (refer to procedure 4.3).

   This solves the problem.

   Yes **No**
   ↓ → Call Hill-Rom Technical Support at (800) 445-3720.

9. Go to "Final Actions" on page 2-12.

2.3 Hilow Down Malfunction

The hilow motor does not lower the bed when the hilow down switch is activated.

1. The bed is plugged into the appropriate power source, and the lockout switch is **off.**

   Yes **No**
   ↓ → Plug the bed into an appropriate power source and turn the lockout switch off. If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 2.

2. Activate the hilow down switch on the opposite siderail. The hilow motor runs.

   Yes **No**
   ↓ → Go to step 4.

3. Activate another bed function switch on the siderail with the non-functioning hilow down switch. The other bed functions work properly.

   Yes **No**
   ↓ → Replace the P.C. switch board containing the faulty function(s) for caregiver controls (refer to procedure 4.30) or for patient controls (refer to procedure 4.29). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 4.

4. Activate the hilow down switch, and listen for an audible relay click. An audible clicking sound can be heard.

   Yes **No**
   ↓ → Replace the logic control P.C. board (refer to procedure 4.23). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 5.

5. Allow the hilow motor to cool. Activate the hilow motor down switch. The hilow motor runs.

   Yes **No**
   ↓ → Replace the hilow motor (refer to procedure 4.3). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 7.

6. Go to "Final Actions" on page 2-12.

7. Set your VOM to measure V DC. At the logic control P.C. board connector P15, place your black probe into pin 1 (black wire) and your red probe into pin 2 (blue wire). Press the hilow down switch. The voltage is between 25V DC and 30V DC.

   Yes **No**
   ↓ → Replace the logic control P.C. board (refer to procedure 4.23). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 8.

8. Replace the hilow motor (refer to procedure 4.3).

   This solves the problem.

   Yes **No**
   ↓ → Call Hill-Rom Technical Support at (800) 445-3720.

9. Go to "Final Actions" on page 2-12.

2.4 Head Drive Operation Failures

The hilow motor runs, but other problems with the motor are suspected (i.e., it is noisy, it drifts, etc.).

1. Raise and lower the head section with the head function. Look for evidence of physical damage to the drive system (i.e., check for a bent motor shaft, loose metal, etc.). The drive system passes inspection.

   Yes **No**
   ↓ → Replace the head motor (refer to procedure 4.5). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 2.

2. Inspect the mounting clevis pins and cotter pins on the head motor drive. The clevis pins are installed properly.

   Yes **No**
   ↓ → Install the head motor clevis pins properly to secure the head motor to the bed frame. If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 3.

3. Raise and lower the head section under a load condition. The head drive runs quietly.

   Yes **No**
   ↓ → Inspect for damage to the head motor. Replace if necessary (refer to procedure 4.5). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 4.

4. Using the head function, raise and lower the head section. The head motor retains its position, and does not drift or coast.

   Yes **No**
   ↓ → Replace the head motor (refer to procedure 4.5). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

5. Go to "Final Actions" on page 2-12.

2.5 Head Up Malfunction

The head motor does not raise the head section when the head up switch is activated.

1. The bed is plugged into the appropriate power source, and the lockout switch is **off.**

   Yes **No**
   ↓ → Plug the bed into an appropriate power source and turn the lockout switch off. If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 2.

2. Check the CPR release handles on either side of the bed. The CPR handles are in the proper position, and no sheets or blankets are caught between the head section and the CPR release handle causing the CPR release to actuate.

   Yes **No**
   ↓ → Remove the sheet or blanket that is causing the CPR release to actuate. If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 3.

3. Activate the head up switch on the opposite siderail. The head motor runs.

   Yes **No**
   ↓ → Go to step 5.

4. Activate another bed switch on the siderail with the non-functioning head up switch. The other bed functions work properly.

   Yes **No**
   ↓ → Replace the P.C. switch board containing the faulty function(s) for caregiver controls (refer to procedure 4.30) or for patient controls (refer to procedure 4.29). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 5.

5. Activate the head up switch, and listen for an audible relay click. An audible clicking sound can be heard.

   Yes **No**
   ↓ → Replace the logic control P.C. board (refer to procedure 4.23). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 6.

6. Allow the head motor to cool. Activate the head motor up switch. The head motor runs.

   Yes **No**
   ↓ → Replace the head motor (refer to procedure 4.5). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 8.

7. Go to "Final Actions" on page 2-12.

8. Set your VOM to measure V DC. At the logic control P.C. board connector P4, place your black probe into pin 1 (brown wire) and your red probe into pin 2 (blue wire). Press the head up switch. The voltage is between 25V DC and 30V DC.

   Yes **No**
   ↓ → Replace the logic control P.C. board (refer to procedure 4.23). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 9.

9. Replace the head motor (refer to procedure 4.5).

   This solves the problem.

   Yes **No**
   ↓ → Call Hill-Rom Technical Support at (800) 445-3720.

10. Go to "Final Actions" on page 2-12.

2.6 Head Down Malfunction

The head motor does not lower the head section when the head down switch is activated.

1. The bed is plugged into the appropriate power source, and the lockout switch is **off.**

   Yes **No**
   ↓ → Plug the bed into an appropriate power source and turn the lockout switch off. If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 2.

2. Activate the head down switch on the opposite siderail. The head motor runs.

   Yes **No**
   ↓ → Go to step 4.

3. Activate another bed switch on the siderail with the non-functioning head down switch. The other bed functions work properly.

   Yes **No**
   ↓ → Replace the P.C. switch board containing the faulty function(s) for caregiver controls (refer to procedure 4.30) or for patient controls (refer to procedure 4.29). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 4.

4. Activate the head down switch, and listen for an audible relay click. An audible clicking sound can be heard.

   Yes **No**
   ↓ → Replace the logic control P.C. board (refer to procedure 4.23). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 5.

5. Allow the head motor to cool. Activate the head down switch. The head motor runs.

   Yes **No**
   ↓ → Replace the head motor (refer to procedure 4.5). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 7.

6. Go to "Final Actions" on page 2-12.

7. Set your VOM to measure V DC. At the logic control P.C. board connector P4, place your black probe into pin 1 (brown wire) and your red probe into pin 2 (blue wire). Press the head down switch. The voltage is between 25V DC and 30V DC.

   Yes **No**
   ↓ → Replace the logic control P.C. board (refer to procedure 4.23). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 8.

8. Replace the head motor (refer to procedure 4.5).

   This solves the problem.

   Yes **No**
   ↓ → Call Hill-Rom Technical Support at (800) 445-3720.

9. Go to "Final Actions" on page 2-12.

2.7 Foot Drive Operation Failures

The foot motor runs, but other problems with the motor are suspected (i.e., it is noisy, it drifts, etc.).

1. Raise and lower the foot section with the foot function. Look for evidence of physical damage to the drive system (i.e., check for a bent motor shaft, loose metal, etc.). The drive system passes inspection.

   Yes **No**
   ↓ → Replace the foot motor (refer to procedure 4.6). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 2.

2. Inspect the mounting clevis pins and cotter pins on the foot motor drive. The clevis pins are installed properly.

   Yes **No**
   ↓ → Install the foot motor clevis pins properly to secure the foot motor to the bed frame. If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 3.

3. Raise and lower the foot section under a load condition. The foot drive runs quietly.

   Yes **No**
   ↓ → Inspect for damage to the foot motor. Replace if necessary (refer to procedure 4.6). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 4.

4. Using the foot function, raise the foot section up and down. The foot motor retains its position, and does not drift or coast.

   Yes **No**
   ↓ → Replace the foot motor (refer to procedure 4.6). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

5. Go to "Final Actions" on page 2-12.

2.8 Foot Up Malfunction

The foot motor does not raise the foot section when the foot up switch is activated.

1. The bed is plugged into the appropriate power source, and the lockout switch is **off.**

   Yes **No**
   ↓ → Plug the bed into an appropriate power source and turn the lockout switch off. If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 2.

2. Activate the foot up switch on the opposite siderail. The foot motor runs.

   Yes **No**
   ↓ → Go to step 4.

3. Activate another bed switch on the siderail with the non-functioning foot up switch. The other bed functions work properly.

   Yes **No**
   ↓ → Replace the P.C. switch board containing the faulty function(s) for caregiver controls (refer to procedure 4.30) or for patient controls (refer to procedure 4.29). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 4.

4. Activate the foot up switch, and listen for an audible relay click. An audible clicking sound can be heard.

   Yes **No**
   ↓ → Replace the logic control P.C. board (refer to procedure 4.23). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 5.

5. Allow the foot motor to cool. Activate the foot up switch. The foot motor runs.

   Yes **No**
   ↓ → Replace the foot motor (refer to procedure 4.6). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 7.

6. Go to "Final Actions" on page 2-12.

7. Set your VOM to measure V DC. At the logic control P.C. board connector P6, place your black probe into pin 1 (black wire) and your red probe into pin 2 (blue wire). Press the foot up switch. The voltage is between 25V DC and 30V DC.

   Yes **No**
   ↓ → Replace the logic control P.C. board (refer to procedure 4.23). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 8.

8. Replace the foot motor (refer to procedure 4.6).

   This solves the problem.

   Yes **No**
   ↓ → Call Hill-Rom Technical Support at (800) 445-3720.

9. Go to "Final Actions" on page 2-12.

2.9 Foot Down Malfunction

The foot motor does not lower the foot section when the foot down switch is activated.

1. The bed is plugged into the appropriate power source, and the lockout switch is **off.**

   Yes **No**
   ↓ → Plug the bed into an appropriate power source and turn the lockout switch off. If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 2.

2. Activate the foot down switch on the opposite siderail. The foot motor runs.

   Yes **No**
   ↓ → Go to step 4.

3. Activate another bed switch on the siderail with the non-functioning foot down switch. The other bed functions work properly.

   Yes **No**
   ↓ → Replace the P.C. switch board containing the faulty function(s) for caregiver controls (refer to procedure 4.30) or for patient controls (refer to procedure 4.29). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 4.

4. Activate the foot down switch, and listen for an audible relay click. An audible clicking sound can be heard.

   Yes **No**
   ↓ → Replace the logic control P.C. board (refer to procedure 4.23). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 5.

5. Allow the foot motor to cool. Activate the foot down switch. The foot motor runs.

   Yes **No**
   ↓ → Replace the foot motor (refer to procedure 4.6). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 7.

6. Go to "Final Actions" on page 2-12.

7. Set your VOM to measure V DC. At the logic control P.C. board connector P6, place your black probe into pin 1 (black wire) and your red probe into pin 2 (blue wire). Press the foot down switch. The voltage is between 25V DC and 30V DC.

   Yes **No**
   ↓ → Replace the logic control P.C. board (refer to procedure 4.23). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 8.

8. Replace the foot motor (refer to procedure 4.6).

   This solves the problem.

   Yes **No**
   ↓ → Call Hill-Rom Technical Support at (800) 445-3720.

9. Go to "Final Actions" on page 2-12.

2.10 Hilow Up Malfunction (When The Foot Section Is Lowered)

The hilow function (or motor) fails to automatically raise the bed from the low position when the foot section is lowered to its lowest point.

1. Activate the hilow function from the siderails and pendant control. The hilow function works properly.

   Yes **No**
   ↓ → Go to “Hilow Up Malfunction” on page 2-14 or “Hilow Down Malfunction” on page 2-16. If this solves the problem, go to “Final Actions” on page 2-12. Otherwise, continue to step 2.

2. Put the bed into the low position. Lower the foot section to the low position. The bed automatically rises.

   Yes **No**
   ↓ → Check the hilow and foot limit switches. Refer to “Hilow Limit Switch” on page 4-13 or “Foot Limit Switch” on page 4-23. If this solves the problem, go to “Final Actions” on page 2-12. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

3. Go to “Final Actions” on page 2-12.

2.11 Brake Caster Malfunction

1. The brake caster pedal locks in the brake position when you push on it with your foot.

   Yes **No**
   ↓ → Inspect the caster for excessive wear. If necessary, replace the damaged caster (refer to procedure 4.32). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, go to step 2.

2. The casters lock in the brake position and do not roll or rotate when you push in the brake pedal.

   Yes **No**
   ↓ → Adjust the caster assembly (refer to procedure 4.32). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, go to step 3.

3. Another part of the Affinity® Three Birthing Bed interferes with the brake mechanism.

   Yes **No**
   ↓ → If the brakes still do not work, call Hill-Rom Technical Support at (800) 445-3720.

4. Take appropriate actions to eliminate the interference.

   This solves the problem.

   Yes **No**
   ↓ → Call Hill-Rom Technical Support at (800) 445-3720.

5. Go to "Final Actions" on page 2-12.

2.12 Bed Air Surface Malfunction

The bed air surface does not function properly.

1. Activate all bed air surface switches in both siderails. Only one switch does not work.

   Yes **No**
   ↓ → Go to step 4.

2. Replace the P.C. switch board containing the faulty function for caregiver controls (refer to procedure 4.30) or for patient controls (refer to procedure 4.29). This solves the problem.

   Yes **No**
   ↓ → Go to step 4.

3. Go to "Final Actions" on page 2-12.

4. Activate all bed air surface switches in both siderails. All of the switches in one siderail work while several of the switches in the opposite siderail fail.

   Yes **No**
   ↓ → Go to step 7.

5. Replace the P.C. switch board(s) containing the faulty functions for caregiver controls (refer to procedure 4.30) or for patient controls (refer to procedure 4.29). This solves the problem.

   Yes **No**
   ↓ → Go to step 7.

6. Go to "Final Actions" on page 2-12.

7. Activate one of the bed air function switches. Audible clicks of the relay from the air system control board can be heard.

   Yes **No**
   ↓ → Go to step 9.

8. Go to step 12.

9. Set your VOM to measure V DC. At the logic control P.C. board connector P8, probe pins 7, 8, 9, 11, and 12 while pressing each siderail air function button (see table 2-2 on page 2-31). The pin voltages are correct.

   Yes **No**
   ↓ → Replace the logic control P.C. board (refer to procedure 4.23). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

Table 2-2. Three Station Manifold I/O Signal Reference
Logic Control P.C. Board Connector P8

Input Command: Mattress Function											
Output Signal	**Pin No.**	**Wire Color**	**SF**	**SS**	**BF**	**BS**	**AI**	**BF/ SF**	**BS/ SS**	**BF/ SS**	**BS/SF**
Pump	11	GRN	X		X	X	X	X			
Lum	7	BLU			X	X		X	X		
Seat	8	VIO	X	X			X	X	X		
In/out	9	RED		X		X			X		
Super-visory	12	ORG	X	X	X	X	X	X	X		
X= ON= 5V DC (approximately)											
Legend: **SF**= Seat firm **SS**= Seat soft **BF**= Back firm **BS**= Back soft **AI**= Auto inflate											

10. Replace the cable or connectors from the logic control P.C. board to the air system control P.C. board. This solves the problem.

    Yes **No**
    ↓ → Call Hill-Rom Technical Support at (800) 445-3720.

11. Go to "Final Actions" on page 2-12.

12. Disconnect the air connectors at the seat section. Activate the back inflate button, and test for air pressure on the patients left-hand side. Activate the back deflate button, and test for air release on the patient's left-hand side. Activate the seat inflate button, and test for air pressure on the patients right hand side. The air pressure and air release is correct at both of the connectors.

    Yes **No**
    ↓ → Go to step 15.

13. Ensure that all hoses and bladders are free of kinks, pinching, and leaks. This solves the problem.

    Yes **No**
    ↓ → Go to step 15.

14. Go to "Final Actions" on page 2-12.

15. Pressure and suction are present at the connectors for all functions.

    Yes **No**
    ↓ → Go to step 17.

16. Go to step 27.

17. Press any bed inflate button. The pump runs.

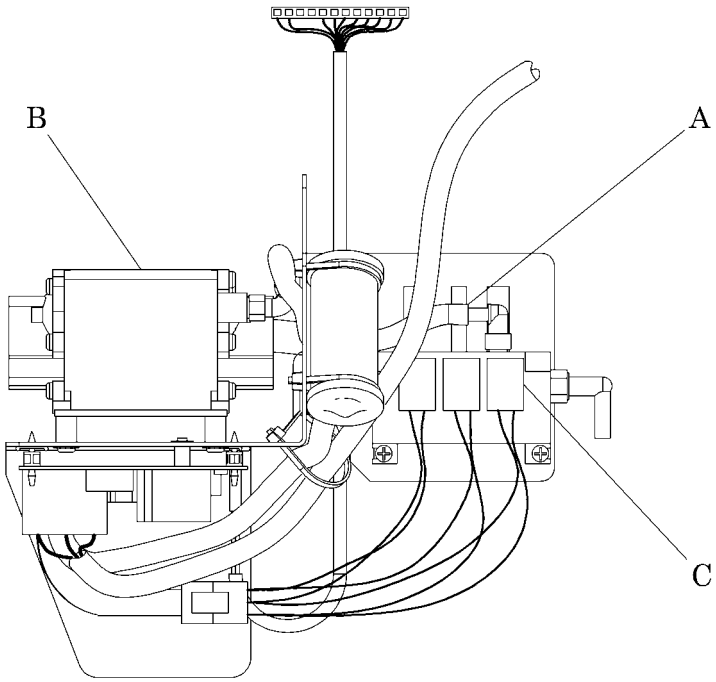
    Yes **No**
    ↓ → Go to step 20.

18. Disconnect the air line (A) from the air compressor (B) to the top of the manifold (C) (see figure 2-2 on page 2-32). Press any bed inflate button to activate the pump. The air compressor creates suction in the air line.

    Yes **No**
    ↓ → Replace the air compressor (refer to procedure 4.20). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 27.

19. Go to step 27.

Figure 2-2. Air System



m272_039

20. Set your VOM to measure V AC. At the air system control P.C. board connector P19, probe pin 1 (black) and pin 3 (white). The voltage is approximately 115V AC.

NOTE:
For high voltage checks, do not unplug the connectors.

NOTE:
Mains power is 120V AC if domestic, 230V AC if European.

Yes **No**
↓ → Go to step 24.

21. Set your VOM to measure V AC. At the air system control P.C. board connector P20, probe pin 1 (black) and pin 3 (white). Press any bed inflate button. The voltage is approximately 115V AC.

NOTE:
For high voltage checks, do not unplug the connectors.

NOTE:
Mains power is 120V AC if domestic, 230V AC if European.

Yes **No**
↓ → Replace the air system control P.C. board (refer to procedure 4.20). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 27.

22. Replace the air compressor (refer to procedure 4.20). This solves the problem.

Yes **No**
↓ → Go to step 27.

23. Go to "Final Actions" on page 2-12.

24. Set your VOM to measure V AC. At the logic control P.C. board connector P16, probe pin 1 (black) and pin 3 (white). The voltage is approximately 115V AC if domestic, or 230V AC if European.

NOTE:
For high voltage checks, do not unplug the connectors.

NOTE:
Mains power is 120V AC if domestic, 230V AC if European.

Yes **No**
↓ → Replace the logic control P.C. board (refer to procedure 4.23). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 27.

25. Replace the cable or connectors between the logic control P.C. board and the air system control P.C. board. This solves the problem.

Yes **No**
↓ → Go to step 27.

26. Go to "Final Actions" on page 2-12.

27. Set your VOM to measure V AC. At the air system control P.C. board connector P21, probe pin 1 (white) and at the air system control P.C. board connector P22, probe the pins listed in table 2-3 on page 2-35 while pressing the appropriate siderail air function buttons (see table 2-3 on page 2-35). The voltage is approximately 115V AC.

NOTE:
For high voltage checks, do not unplug the connectors.

NOTE:
Mains power is 120V AC if domestic, 230V AC if European.

NOTE:
See "3-Station Manifold I/O Signal Reference" table 2-2 on page 2-31.

Yes **No**
↓ → Replace the air system control P.C. board (refer to procedure 4.22). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

Table 2-3. Solenoid Test—Air System Control P.C. Board Connector P22

Pin#	Wire Color	Press Function
1	Yellow or black	Back firm
2	Brown	Seat firm
5	Red	Seat soft
6	Violet	Seat soft
8	Pink	Seat soft
9	Tan	Seat firm

28. Set your VOM to measure V DC. At the logic control P.C. board connector P8, probe pins 7, 8, 9, 11, and 12 while pressing each siderail air function button (see table 2-2 on page 2-31). The pin voltages are correct.

    Yes **No**
    ↓ → Replace the logic control P.C. board (refer to procedure 4.23). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

29. Replace the cable or connectors from the logic control P.C. board to the air system control P.C. board.

    This solves the problem.

    Yes **No**
    ↓ → Call Hill-Rom Technical Support at (800) 445-3720.

30. Go to "Final Actions" on page 2-12.

2.13 Night Light Does Not Illuminate

1. The night light comes on when the ambient light dims.

   Yes **No**
   ↓ → Replace the lamp bulb or fixture if damaged (refer to procedure 4.13). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 2.

2. Verify that the photocell functions. The night light comes on when the ambient light dims.

   Yes **No**
   ↓ → Replace the photocell. If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 3.

3. The system functions normally.

   Yes **No**
   ↓ → Verify that the night light lamp cable is plugged into the logic control P.C. board connector, P1. If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 4.

4. The system functions normally.

   Yes **No**
   ↓ → Replace the logic control P.C. board (refer to procedure 4.23). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

5. Go to "Final Actions" on page 2-12.

2.14 Siderail Mechanism Does Not Hold

1. From the low (stow) position, raise the siderail by pulling the siderail up until it clicks in the locked position. It rises and clicks into place.

   Yes **No**
   ↓ → Inspect for obstructions, missing hardware, or loose fasteners. If found, replace the siderail. See “Siderail Assembly” on page 4-72. If this solves the problem, go to “Final Actions” on page 2-12. Otherwise, continue to step 2.

2. Grasp the top of the siderail, and push and pull firmly on the siderail. The siderail remains latched in the locked position.

   Yes **No**
   ↓ → Inspect for obstructions or loose fasteners. If found, replace the siderail. See “Siderail Assembly” on page 4-72. If this solves the problem, go to “Final Actions” on page 2-12. Otherwise, continue to step 3.

3. Stow the siderail as follows: grasp and pull the release handle out, and allow the siderail to swing down in a controlled, dampened, manner to the fully stowed position. The siderail goes down into the stored position.

   Yes **No**
   ↓ → Inspect for obstructions in the center arm, loose fasteners, missing spring, or binding. If found, replace the siderail. See “Siderail Assembly” on page 4-72. If this solves the problem, go to “Final Actions” on page 2-12. Otherwise, continue to step 4.

4. Another part of the Affinity® Three Birthing Bed interferes with the siderail.

   Yes **No**
   ↓ → If the siderail still does not work properly, call Hill-Rom Technical Support at (800) 445-3720.

5. Take appropriate actions to eliminate the interference.

   This solves the problem.

   Yes **No**
   ↓ → Call Hill-Rom Technical Support at (800) 445-3720.

6. Go to “Final Actions” on page 2-12.

2.15 Trend-Like Position Malfunction

1. If unable to place the bed in the Trend-Like position, press the hilow up switch to raise the bed to a higher position. Push down on the Trend-Like position release handle. The head end is 8° below the foot end.

   Yes **No**

   ↓ → Verify that the Trend-Like position release handles are properly adjusted and functional. See “Trend-Like Position Sensing Switch” on page 4-29 for access and safety precautions in servicing the Trendelenburg features. If this solves the problem, go to “Final Actions” on page 2-12. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

2. Go to “Final Actions” on page 2-12.

2.16 Battery Back-up Malfunction

1. The battery has been properly charged and is providing power to the bed.

   Yes **No**
   ↓ → Charge the battery. Refer to "Battery Back-up" on page 1-7. If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 2.

2. Using the VOM, check the battery fuse for electrical continuity. The battery fuse is in good condition.

   Yes **No**
   ↓ → Replace the battery fuse (refer to procedure 4.19). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 3.

3. Visually inspect for loose connections on cable assemblies and electrical wires. All cable connections and wiring are properly secured.

   Yes **No**
   ↓ → Secure the cable connections and wiring. If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 4.

4. Set your VOM to measure V DC. At the logic control P.C board, connect the ground lead of the VOM to the negative side of C1 and the positive lead to the positive side of D15 (the side **without** a silver band). The voltage is between 27.6 and 28.0 V DC.

   Yes **No**
   ↓ → Adjust the battery charge circuit (refer to procedure 4.19). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 5.

5. Set your VOM to measure V AC. At the logic control P.C board connector P2, probe pin 1 (yellow) and pin 2 (red). The voltage is approximately 12V AC or 24V AC.

   Yes **No**
   ↓ → Replace the transformer assembly (refer to procedure 4.24). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 6.

6. Set your VOM to measure V DC. Probe connector P5 at the logic control P.C. board. The voltage is between 25 V DC to 30V DC.

   Yes **No**
   ↓ → Replace the logic control P.C. board (refer to procedure 4.23). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, continue to step 7.

7. Replace the two batteries in the battery back-up assembly (refer to procedure 4.19). This solves the problem.

   Yes **No**
   ↓ → Call Hill-Rom Technical Support at (800) 445-3720.

   Go to "Final Actions" on page 2-12.

2.17 CPR Release Malfunction

1. Pull and hold the CPR release handle. The head section goes into the full flat position. (When unoccupied, the head section may require slight downward hand pressure to rotate completely into the full flat position.)

   Yes **No**
   ↓ → Check the adjustment of the CPR function (refer to procedure 4.8). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, go to step 2.

2. Visually inspect the head drive motor assembly for damage or missing parts. The head drive motor assembly is in good working condition.

   Yes **No**
   ↓ → Replace the head drive motor assembly (refer to procedure 4.5). If this solves the problem, go to "Final Actions" on page 2-12. Otherwise, go to step 3.

3. Another part of the Affinity® Three Birthing Bed interferes with the CPR release mechanism.

   Yes **No**
   ↓ → If the head section still does not release, call Hill-Rom Technical Support at (800) 445-3720.

4. Take appropriate actions to eliminate the interference.

   This solves the problem.

   Yes **No**
   ↓ → Call Hill-Rom Technical Support at (800) 445-3720.

5. Go to "Final Actions" on page 2-12.

NOTES:

Chapter 3
Theory of Operation

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NOTES:

Electrical System

The following wiring diagrams detail the electrical circuits and the P.C. boards on the Affinity® Three Birthing Bed. Use these diagrams as troubleshooting aids.

Figure 3-1. Affinity® Three Birthing Bed Wiring Diagram—P/N 63993

Refer to fold-out FO 3-1 at the rear of this manual.

Figure 3-2. Logic Control P.C. Board—P/N 68121 Top

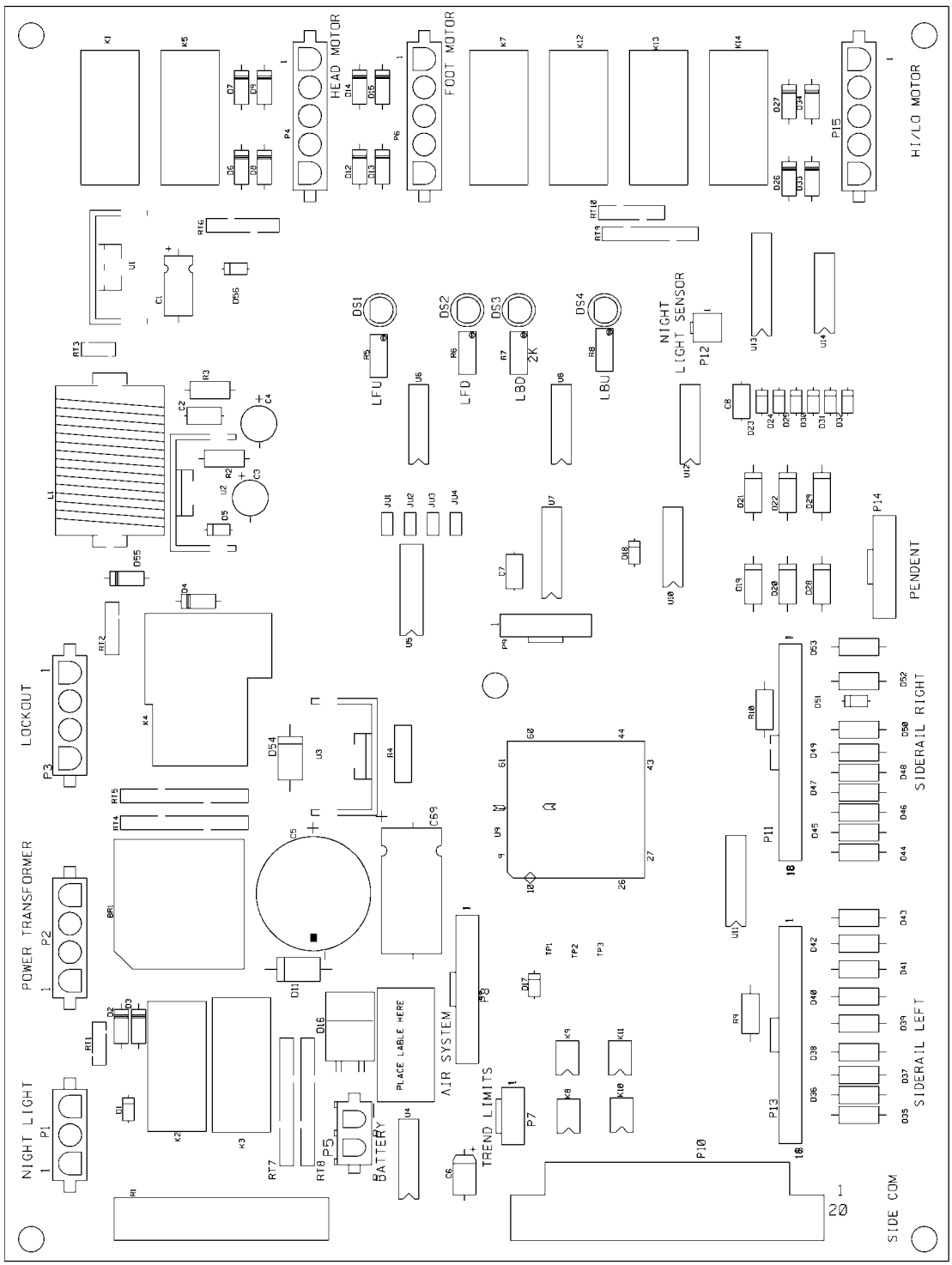

Figure 3-3. Logic Control P.C. Board—P/N 68121 Bottom

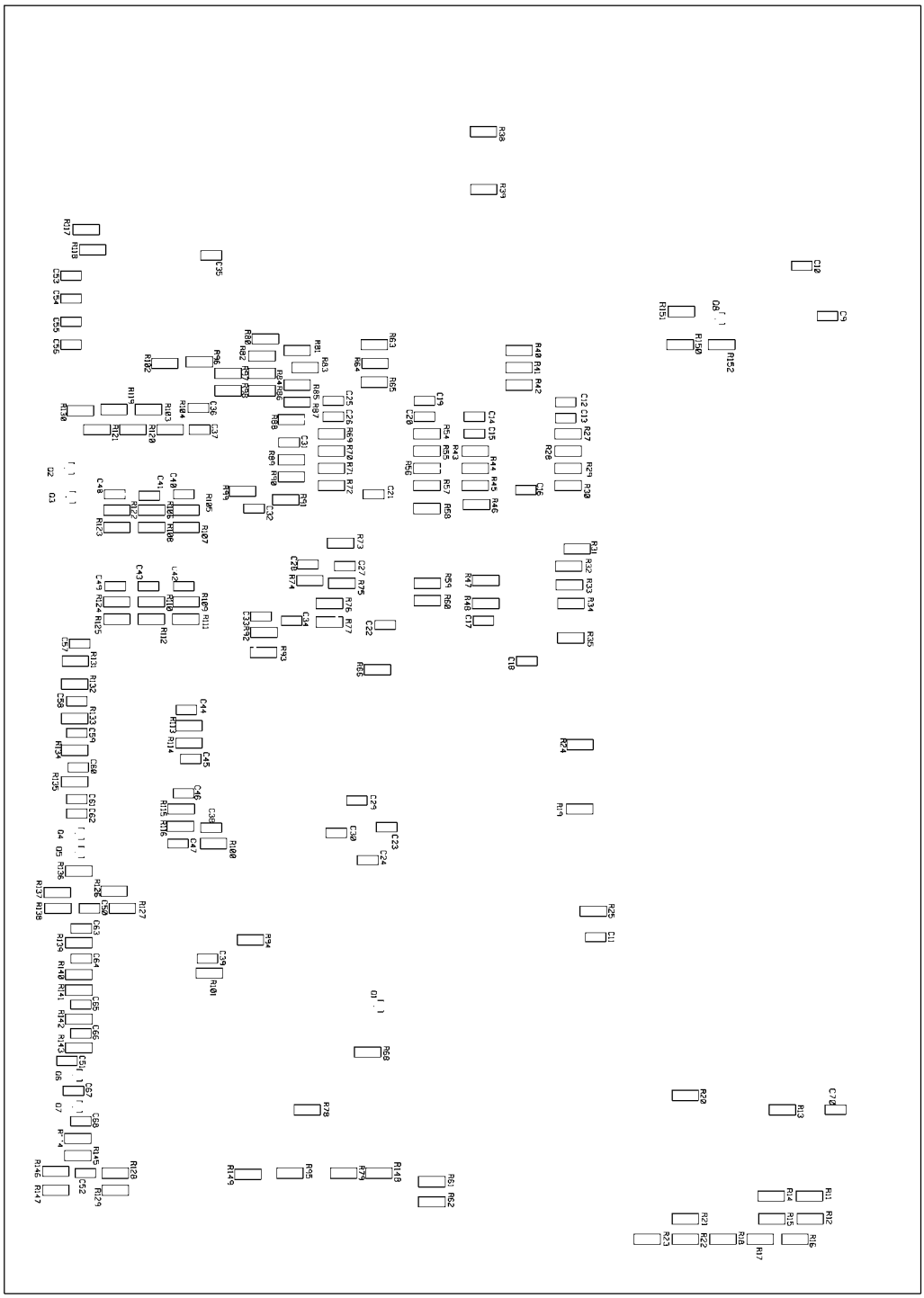

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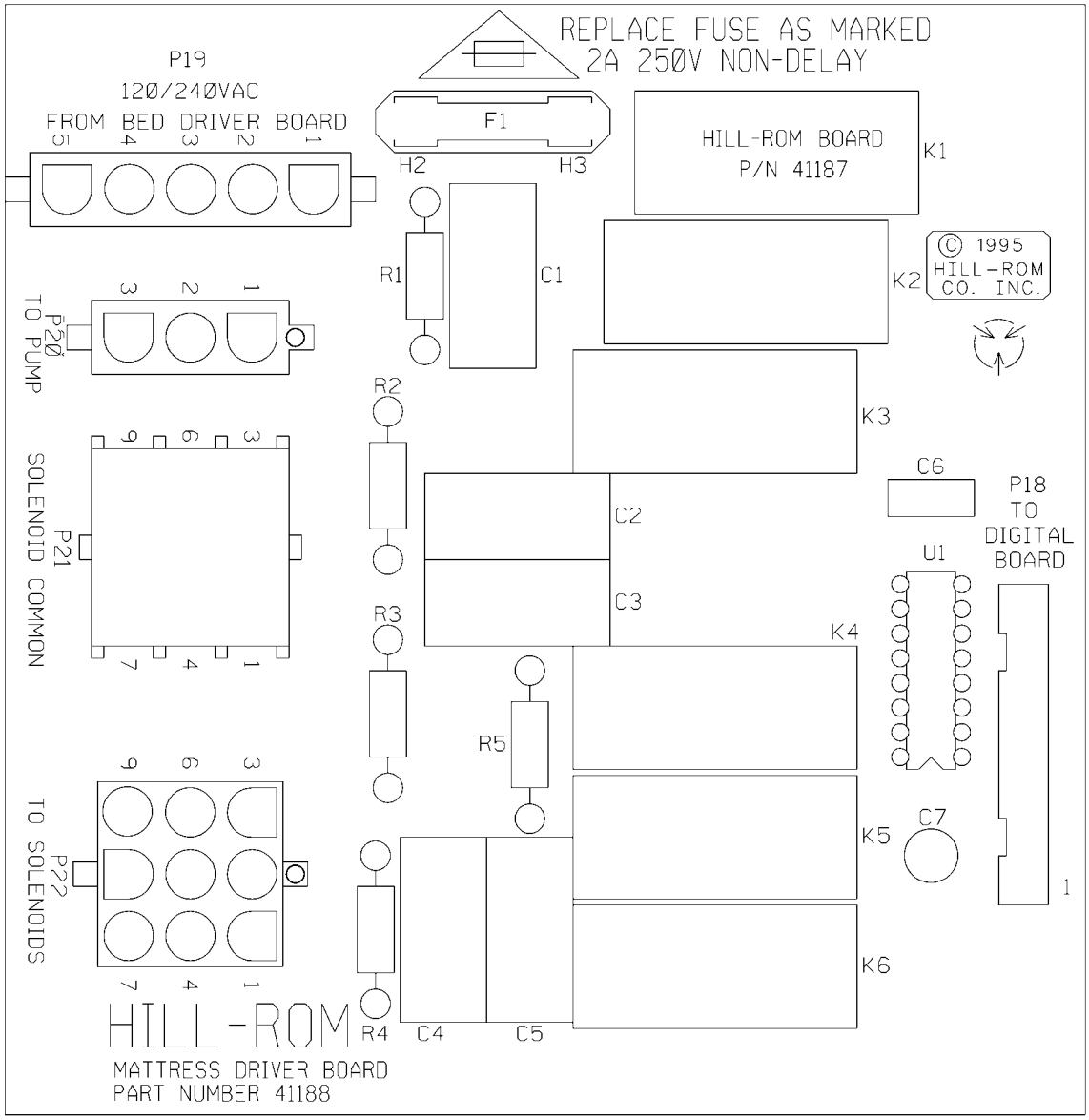
Figure 3-4. Mattress Driver P.C. Board P/N 41188



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Theory of Operation

A theory of operation is not available for the Affinity® Three Birthing Bed.

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Chapter 4
Removal, Replacement, and Adjustment Procedures

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4.1 Top Motor Cover

Tools required: Ratchet T25 Torx®[1] head bit

Removal

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the hilow function, raise the bed to the high position.
4. Using the head function, raise the head section to the high position.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

5. Unplug the bed from its power source, and engage the lockout control.
6. Using a ratchet and T25 Torx® head bit, remove the seven screws (A) securing the top motor cover (B) (see figure 4-1 on page 4-6).
7. Remove the two headboard bushings (C) from the top motor cover (B).
8. Remove the top motor cover (B) from the bed.

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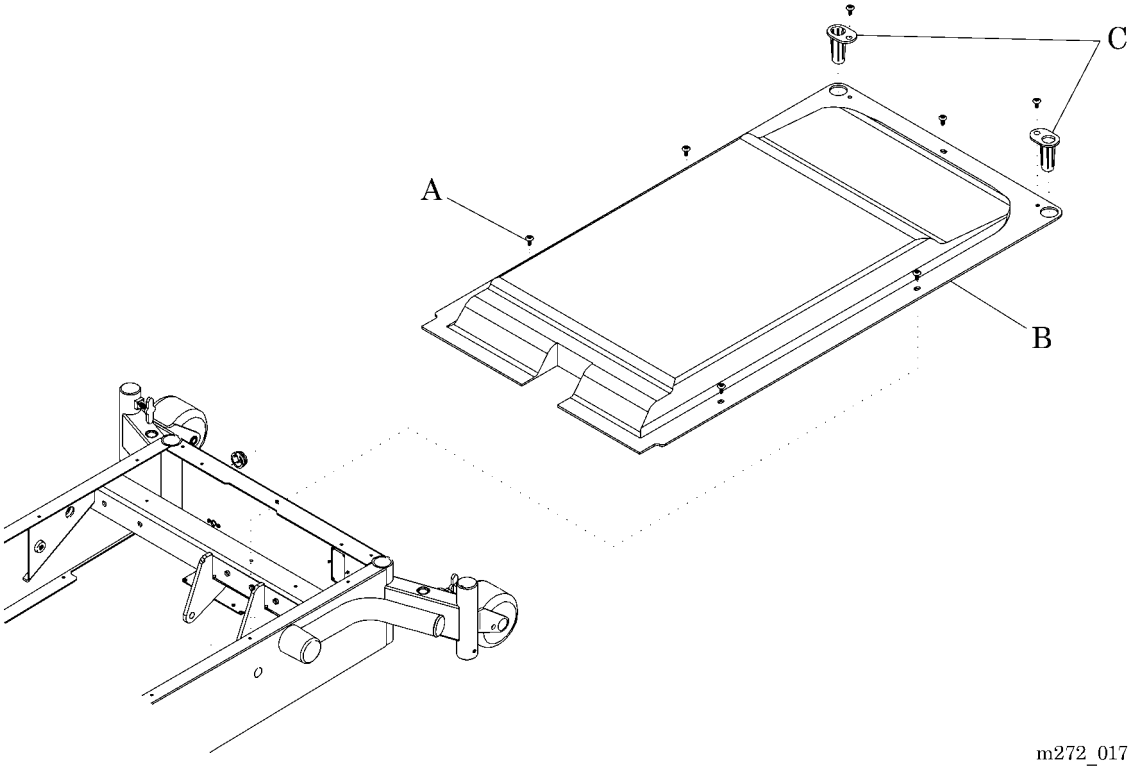
Figure 4-1. Top Motor Cover Assembly



Replacement

To install the top motor cover (B), reverse the removal procedure.

4.2 Bottom Motor Cover

Tools required: Ratchet T25 Torx®[1] head bit

Removal

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the hilow function, raise the bed to the high position.
4. Using the head function, raise the head section to the high position.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

5. Unplug the bed from its power source, and engage the lockout control.
6. Remove the top motor cover (refer to procedure 4.1).
7. Disconnect the night light and cable assembly (A) from logic control P.C. board connector P1 (see figure 4-2 on page 4-8).
8. Disconnect the pendant control cable (B) from logic control P.C. board connector P14 (see figure 4-2 on page 4-8).
9. Using a ratchet and T25 Torx® head bit, remove the six screws (C) securing the bottom motor cover (D).
10. Remove the bottom motor cover (D) from the bed.

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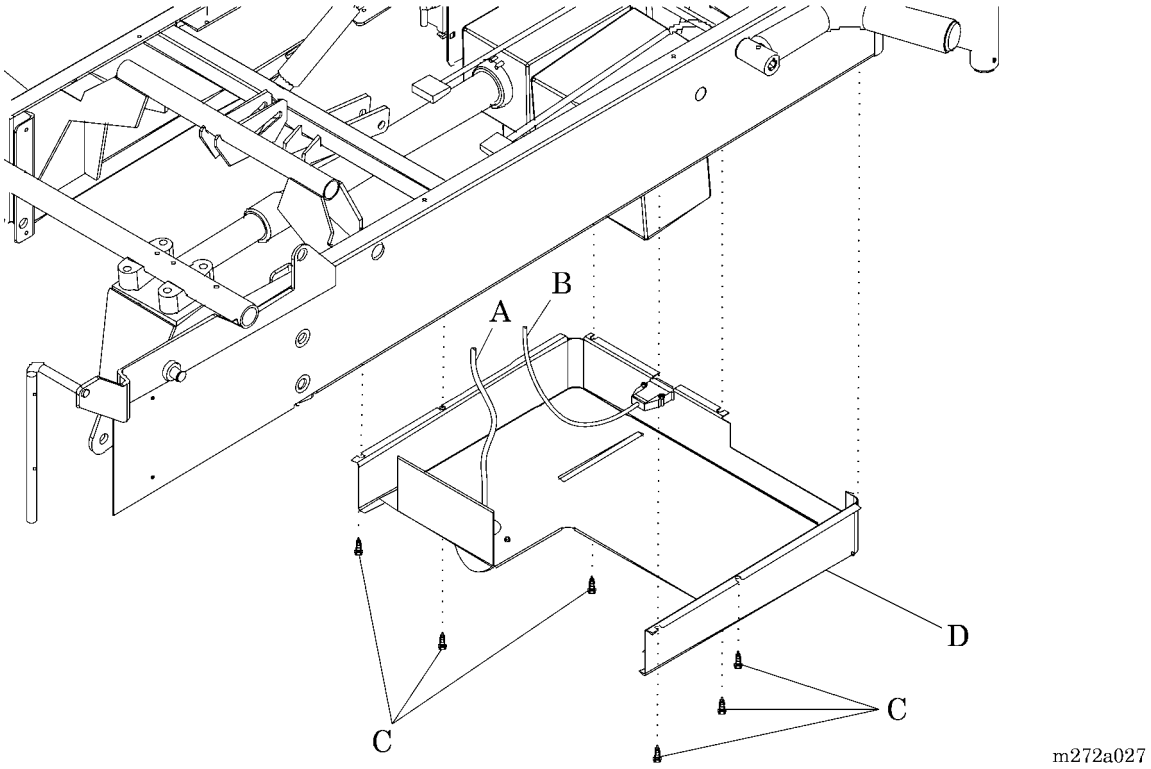
Figure 4-2. Bottom Motor Cover Assembly



Replacement

1. To install the bottom motor cover (D), reverse the removal procedure.

2. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

4.3 Hilow Drive Motor Assembly

Tools required: T25 Torx®[1] head bit Ratchet
Needle nose pliers
Bed stands, or (2) pieces of 2" x 4" x 32" lumber

Removal

1. Set the brake/steer pedal to the brake position.
2. Using the hilow function, raise the bed to the high position.
3. Using the head function, raise the head section to the high position.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

4. Unplug the bed from its power source, and engage the lockout control.
5. Remove the top motor cover (refer to procedure 4.1).
6. Remove the bottom motor cover (refer to procedure 4.2).

WARNING:
You must use the 2" x 4" pieces of lumber to support the bed. The bed will fall during this procedure if not supported. Failure to do so could result in personal injury or equipment damage.

7. Position the two 2" x 4" x 32" pieces of lumber (A) across the base frame (B) beneath the lift arms (C) (see figure 4-3 on page 4-10).
8. Ensure that the 4" flat side of the lumber (A) lies flat on the base frame (B).
9. Before lowering the bed, visually inspect underneath the bed for obstructions that may damage the night light when the bed is lowered.

4

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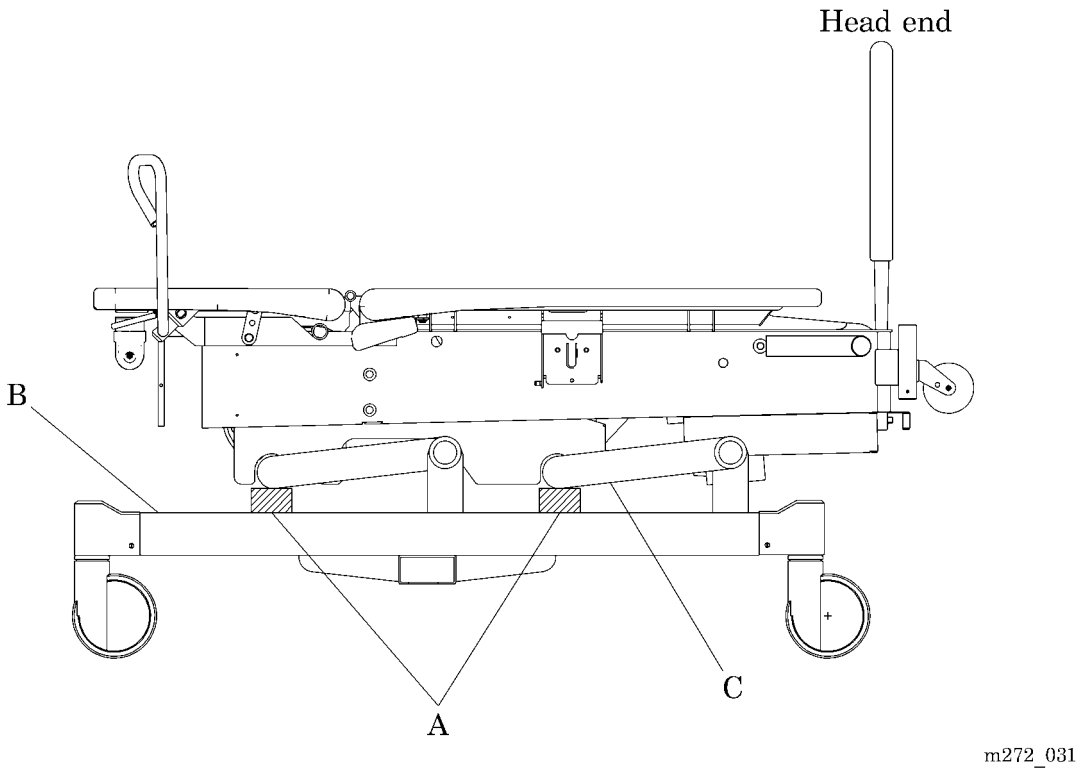
Figure 4-3. Bed Support Location



CAUTION:
Ensure that the night light is not damaged when the bed is being lowered. Failure to do so could result in equipment damage.

10. Deactivate the lockout function, and lower the bed until both lift arms (C) are resting on the 2" x 4"s.

11. Using a ratchet and T25 Torx®[1] head bit, remove the four screws (D) securing the electronics plate weldment (E) to the bed frame (see figure 4-4 on page 4-11).

12. To improve access to the hilow drive motor assembly (F) on the right side, carefully lift and move the electronics plate weldment (E) to the patient's left-hand side of the bed.

13. Unplug the hilow drive motor assembly (F) power cable (G) from logic control P.C. board (H) connector P15.

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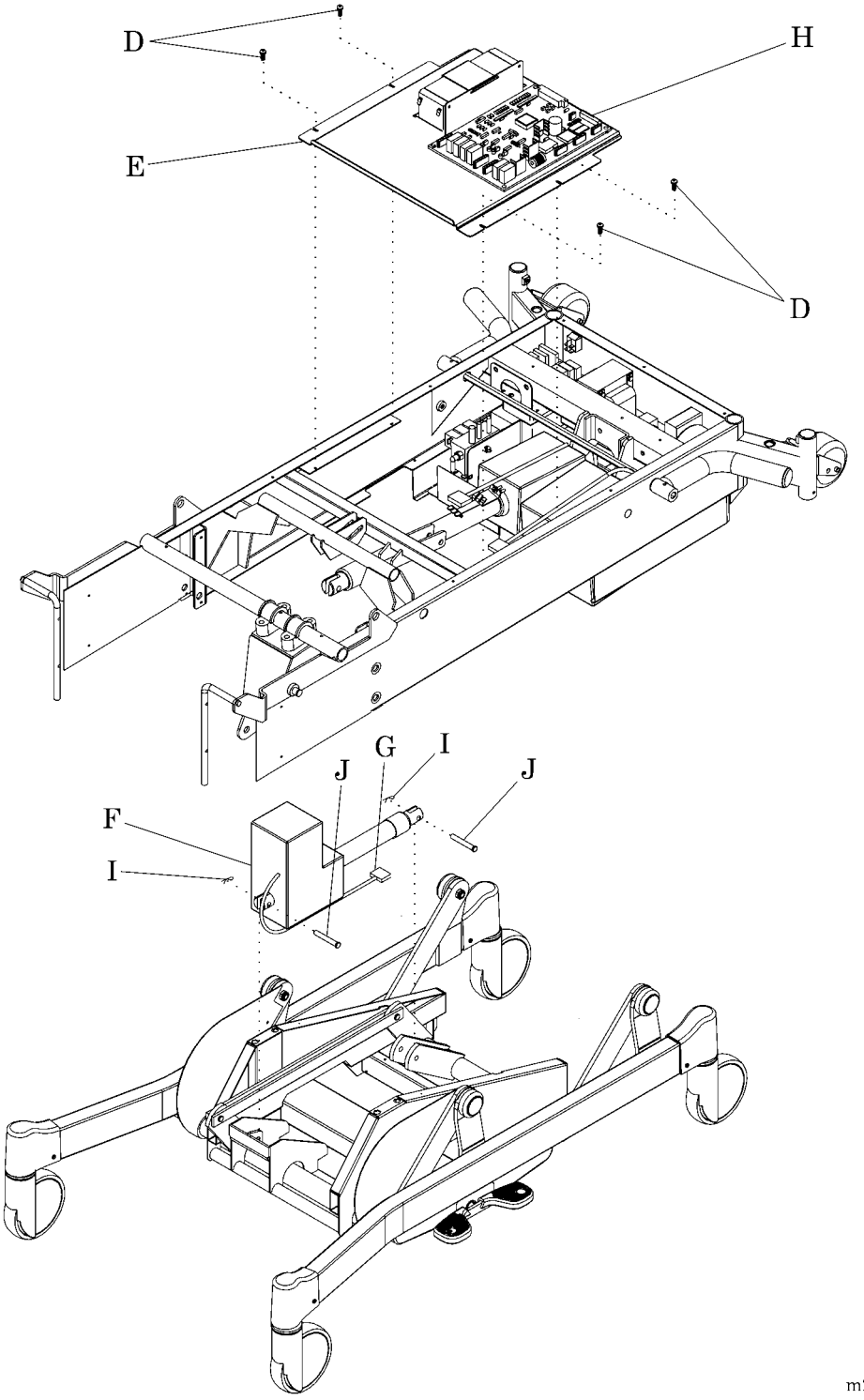
Figure 4-4. Hilow Drive Motor Assembly



14. Using the needle nose pliers, remove two cotter pins (I) from the two clevis pins (J) that secure the hilow drive motor assembly (F) to the bed frame.

15. Remove the two clevis pins (J) from the hilow drive motor assembly (F), and from the bed frame.

16. Remove the hilow drive motor assembly (F).

Replacement

1. To install the replacement hilow drive motor assembly (F), reverse the removal procedure.

2. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

4.4 Hilow Limit Switch

Tools required: Small screwdriver Tape measure

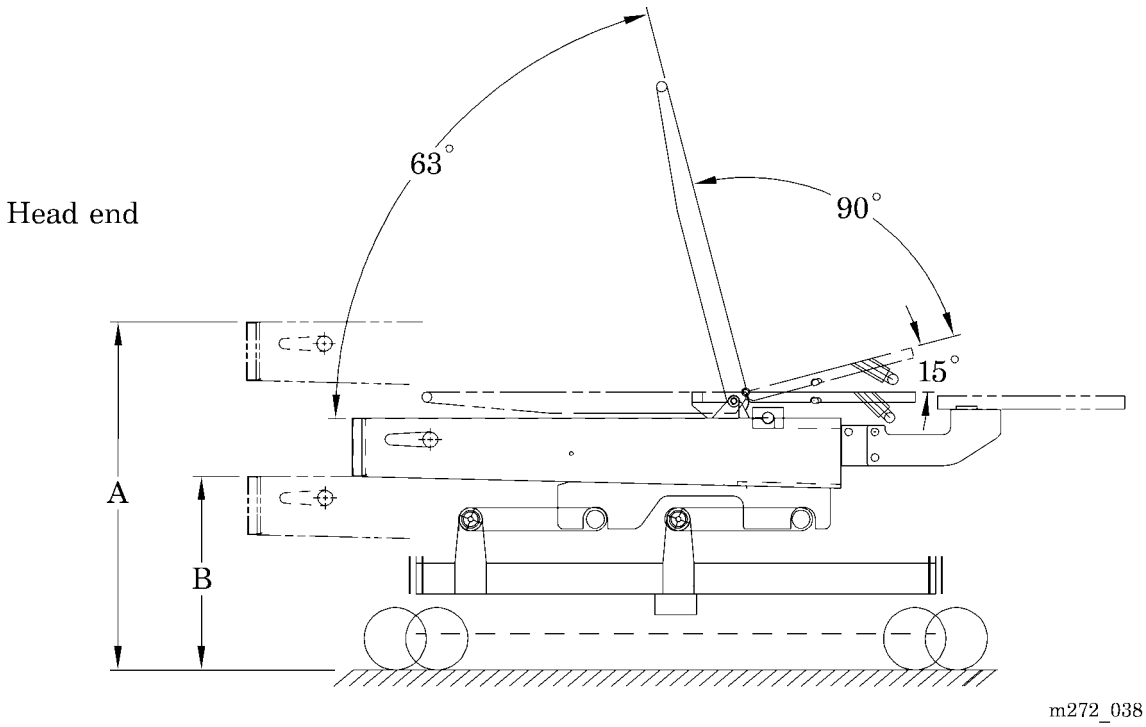
The hilow limit switch enables the correct maximum raised position of the bed. Its adjustment should be checked whenever the bed's hilow system is serviced, such as when replacing the motor and during preventive maintenance. This switch controls the bed's travel limits and the Trend-Like function limits.

There are five limits controlled by this switch. Adjusting the bed travel to the correct maximum height provides the correct adjustment of the other four limits.

Checking the Hilow Limit Switch

1. Ensure that the bed is operational with the hilow system correctly installed and connected.
2. Set the brake/steer pedal to the brake position.
3. Ensure that the bed is out of the Trend-Like position.
4. Using the hilow function, raise the bed to the high position.
5. Using the head function, raise the head section to the high position.
6. Using the tape measure, measure from the top center point of the main frame (at the head end of the bed) to the floor. The distance (A) should be 31" ± ½" (787.4 ± 12.7 mm) (see figure 4-5 on page 4-14).
7. If the distance (A) is correct, go to step 8. If the distance (A) is not correct, adjust the hilow limit switch by following the procedures in the section, "Adjustment" on page 4-14.
8. To ensure proper operation of the Affinity® Three Birthing Bed, perform the "Function Checks" on page 2-6.

Figure 4-5. Hilow Limit Switch



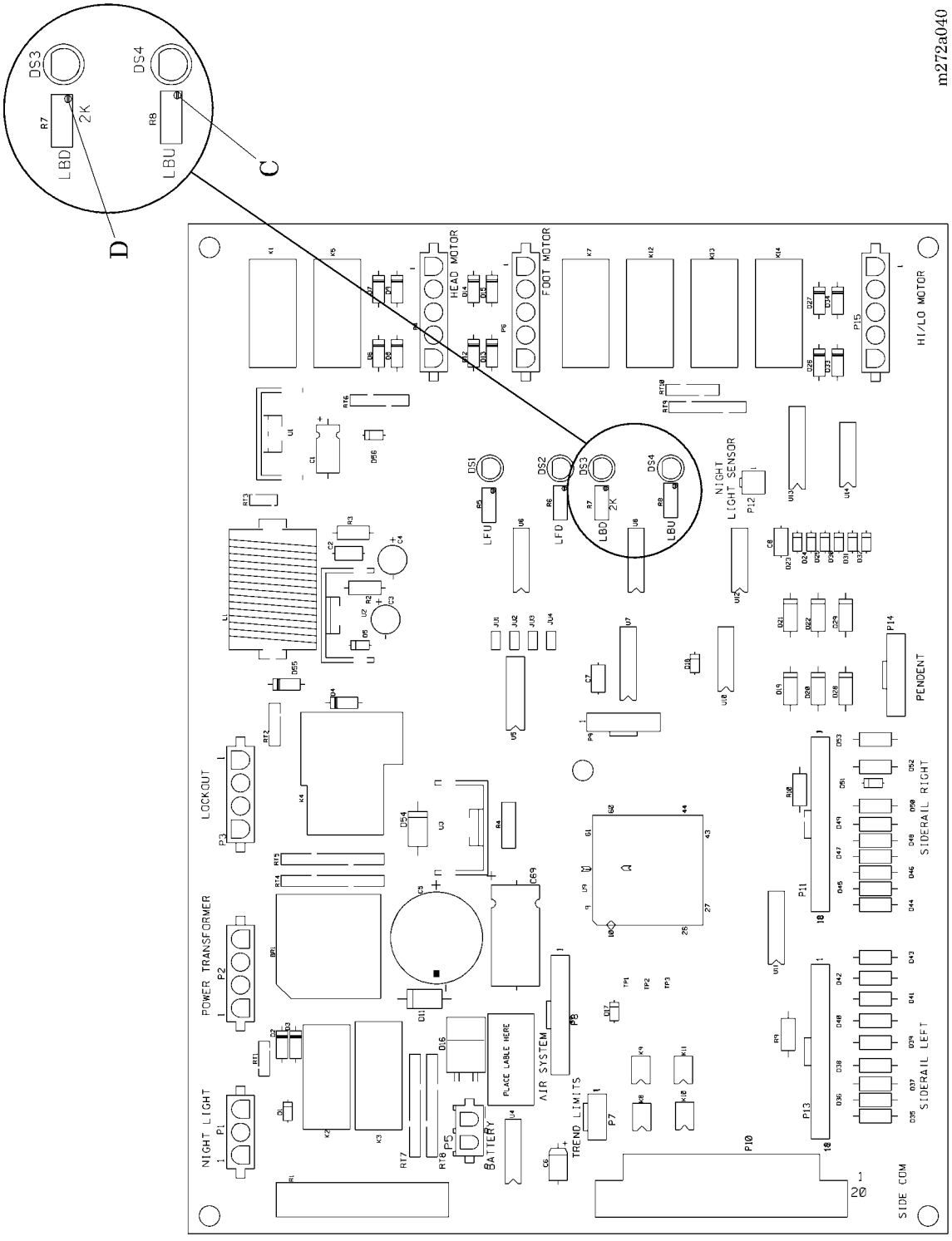
Adjustment

1. If the distance (A) is not 31" ± ½" (787.4 ± 12.7 mm), adjust the hilow limit switch by performing the following steps:
   a. Using the hilow function, raise the bed until the distance (A) is 31" (787.4 mm).
   b. Using the small screwdriver, turn the screw (C) on the hilow limit switch (LBU), located on the logic control P.C. board, until the green light comes on (see figure 4-6 on page 4-15).

NOTE:
The green light indicates the maximum limit of the hilow function's travel. If the green light is out, the hilow function can travel farther until the light comes on or the bed reaches its mechanical limits.

   c. Continue to adjust the screw clockwise and counterclockwise in small increments, until an adjustment is attained between the green light coming on and going off.

Figure 4-6. Logic Control P.C. Board—P/N 68121



d. Using the hilow function, lower the bed until dimension B is 16" (406.4 mm) (see figure 4-5 on page 4-14).

e. Using the small screwdriver, turn the screw (D) on the hilow limit switch (LBD), located on the logic control P.C. board, until the green light comes on (see figure 4-6 on page 4-15).

f. Continue to adjust the screw clockwise and counterclockwise in small increments, until an adjustment is attained between the green light coming on and going off.

g. Using the hilow function, lower and then raise the bed.

h. Check the bed height at the high position. Verify that the distance (A) is 31" ± ½" (787.4 ± 12.7 mm) (see figure 4-5 on page 4-14).

i. Check the bed height at the low position. Verify that dimension B is 16" ± 1/2" (406.4 ± 12.7 mm).

j. Repeat step a through step i until the high position of the bed is correct.

NOTE:
An adjustment to the hilow limit switch requires verification of the foot limit switch adjustment.

2. Check the foot limit switch adjustment as instructed in the section, “Foot Limit Switch” on page 4-23.

3. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

4.5 Head Drive Motor Assembly

Tools required: T25 Torx®[1] head bit, Ratchet, Needle nose pliers, Small wire cutters, Bed stands, or (2) pieces of 2" x 4" x 32" lumber

Removal

1. Set the brake/steer pedal to the brake position.
2. Using the hilow function, raise the bed to the high position.
3. Using the head function, raise the head section to the high position.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

4. Unplug the bed from its power source, and engage the lockout control.
5. Remove the top motor cover (refer to procedure 4.1).
6. Remove the bottom motor cover (refer to procedure 4.2).
7. Perform step 7 through step 10 in the section titled “Hilow Drive Motor Assembly” on page 4-9.

CAUTION:
Ensure that the night light is not damaged when the bed is being lowered. Failure to do so could result in equipment damage.

8. Using a ratchet and T25 Torx® head bit, remove the four screws (A) securing the electronics plate weldment (B) to the bed frame (see figure 4-7 on page 4-18).
9. To improve access to the head drive motor assembly (C), carefully lift and move the electronics plate weldment (B) to the patient’s left-hand side of the bed.

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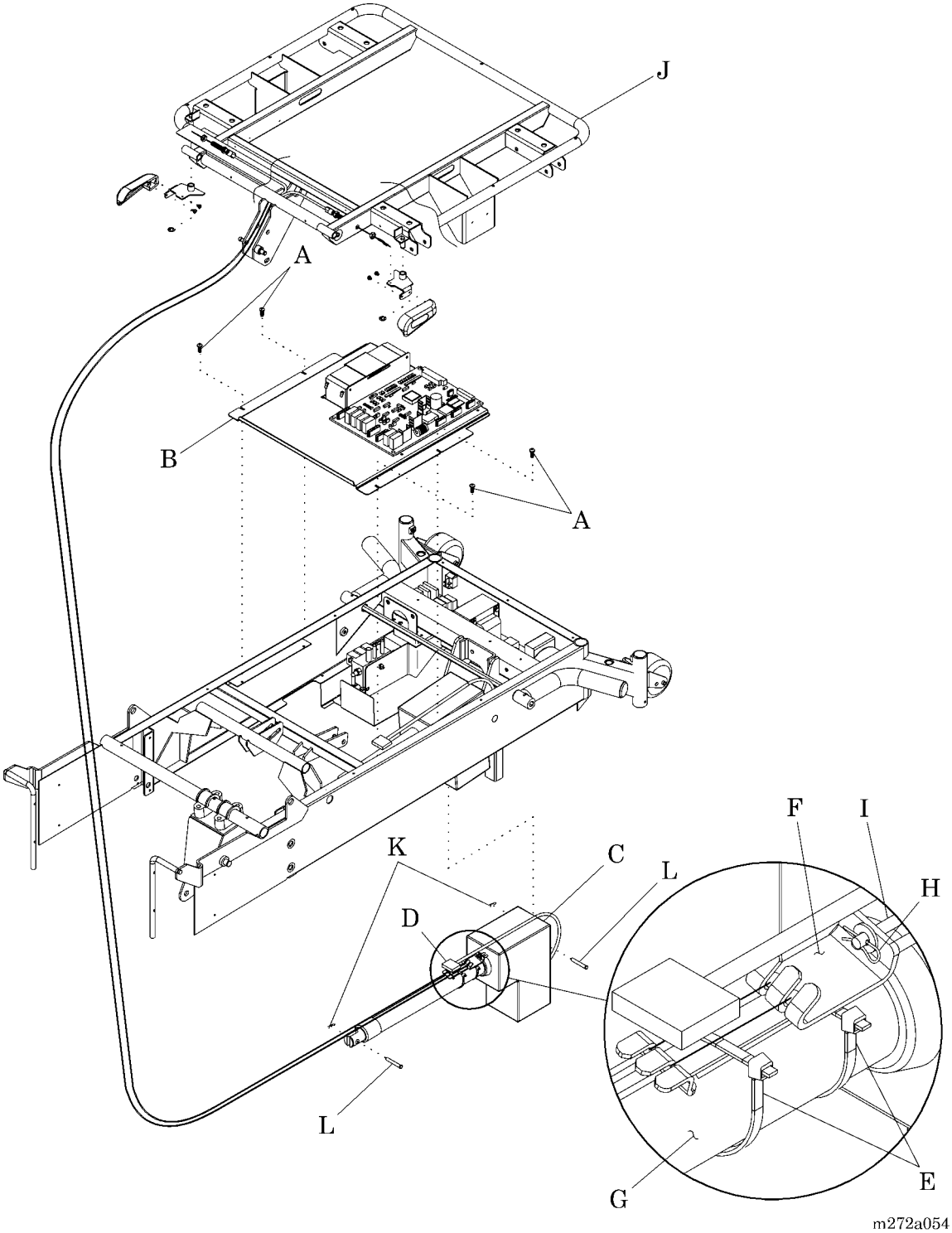
Figure 4-7. Head Drive Motor Assembly



10. Unplug the head drive motor assembly (C) power cable (D) from logic control P.C. board connector P4.

11. Using the small wire cutters, cut the two cable ties (E) that secure the CPR cable assembly (F) to the head drive motor shaft (G).

12. Using the needle nose pliers, remove the cotter pin (H), that secures the CPR cable assembly (F) to the head drive motor release pin (I).

13. Note the orientation of the CPR cables to ensure that the CPR cables are oriented correctly during the replacement procedure.

14. Remove the CPR cable assembly (F) from the head drive motor.

WARNING:
Prop up the head section before removing the cotter pins and clevis pins. Failure to do so could result in personal injury or equipment damage.

15. Lift the head section (J) frame upward, and prop it up (support it).

16. Using the needle nose pliers, remove the cotter pins (K) from the two clevis pins (L) that secure the head drive motor assembly (C) to the bed frame.

17. Remove the head drive motor assembly (C) from the bed frame.

Replacement

1. To install the replacement head drive motor assembly (C), reverse the removal procedure **with attention to the following**:
   a. Ensure that the CPR cable routing is correct and free from binding.
   b. Ensure that all cable ties, clamps, and connectors are properly installed.

2. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

Adjustment

To adjust the CPR function, refer to “CPR Release” on page 4-27.

4.6 Foot Drive Motor Assembly

Tools required: T25 Torx®[1] head bit Ratchet
Needle nose pliers
Bed stands, or (4) pieces of 2" x 4" x 32" lumber

Removal

1. Set the brake/steer pedal to the brake position.
2. Using the hilow function, raise the bed to the high position.
3. Using the head function, raise the head section to the high position.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

4. Unplug the bed from its power source, and engage the lockout control.
5. Remove the top motor cover (refer to procedure 4.1).
6. Remove the bottom motor cover (refer to procedure 4.2).
7. Perform step 7 through step 10 in “Hilow Drive Motor Assembly” on page 4-9.

WARNING:
You must use the 2" x 4" pieces of lumber to support the bed. The bed will fall during this procedure if not supported. Failure to support the bed could result in personal injury or equipment damage.

CAUTION:
Ensure that the night light is not damaged when the bed is being lowered. Failure to do so could result in equipment damage.

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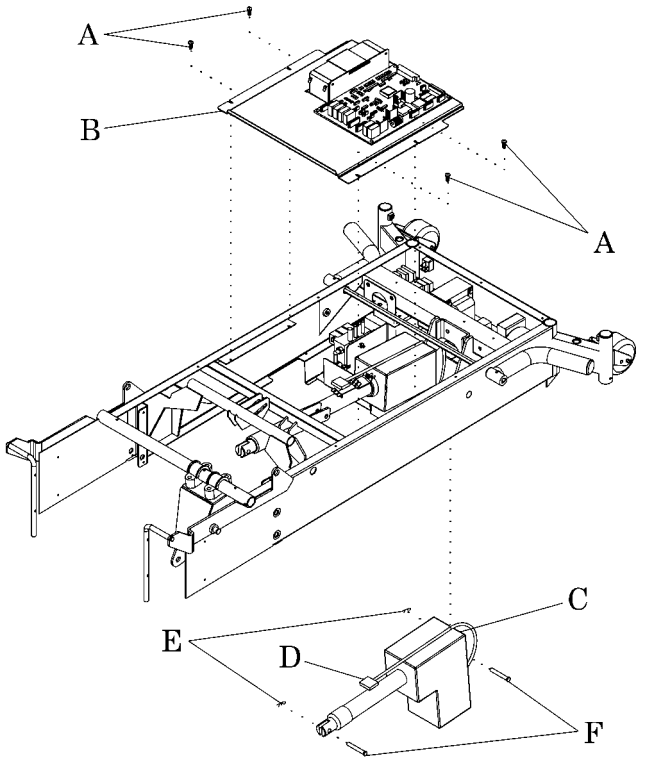
WARNING:
You must use the 2" x 4" pieces of lumber to support the foot yoke. The foot yoke will fall during this procedure if not supported. Failure to do so could result in personal injury or equipment damage.

8. Place the remaining 2" x 4" pieces of lumber below the foot yoke.

9. Deactivate the lockout function, and lower the foot section until the foot yoke is resting on the 2" x 4" pieces of lumber.

10. Using a ratchet and T25 Torx®[1] head bit, remove the four screws (A) securing the electronics plate weldment (B) to the bed frame (see figure 4-8 on page 4-21).

Figure 4-8. Foot Drive Motor Assembly



11. To improve access to the foot drive motor assembly (C) on the left side, carefully lift and move the electronics plate weldment (B) to the patient's right-hand side of the bed.

1. Torx® is a registered trademark of Textron, Inc.

12. Unplug the foot drive motor assembly (C) power cable (D) from logic control P.C. board connector P6.

13. Using the needle nose pliers, remove two cotter pins (E) from the two clevis pins (F) that secure the foot drive motor assembly (C) to the bed frame.

14. Remove the two clevis pins (F) from the foot drive motor assembly (C), and from the bed frame.

15. Remove the foot drive motor assembly (C).

Replacement

1. To install the replacement foot drive motor assembly (C), reverse the removal procedure.

2. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

4.7 Foot Limit Switch

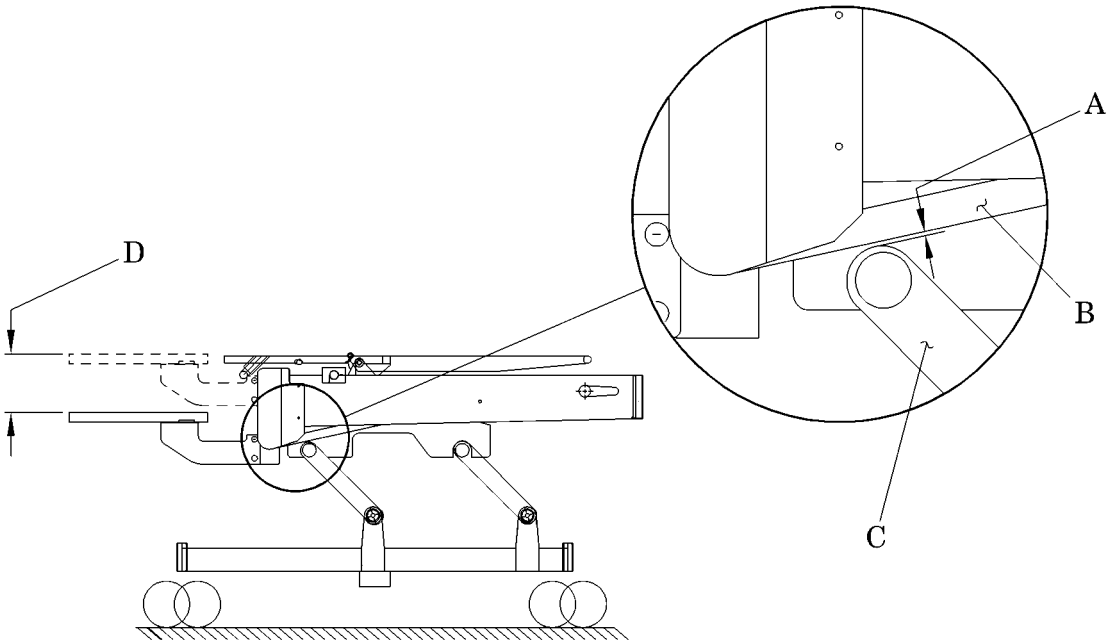
Tools required: Small screwdriver Tape measure

The foot limit switch adjustment should be performed whenever the bed's foot system is serviced, such as when the foot motor is replaced, when the hilow switch is adjusted, and during preventive maintenance.

Checking the Foot Limit Switch

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the hilow function, raise the bed to the high position.
4. Using the head function, raise the head section to the high position.
5. Using the foot function, lower the foot section to the low position.
6. Using the tape measure, measure the gap (A) between the foot section left-hand lift arm (B) and the hilow left-hand lift arm (C). The distance should be exactly ¼" (6.4 mm). (see figure 4-9 on page 4-23).

Figure 4-9. Checking the Foot Limit Switch



m272a036

7. If the distance (A) is correct, go to step 8. If the distance (A) is not correct, adjust the foot limit switch by following the procedures in the section, “Adjustment” on page 4-24.

8. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

Adjustment

1. If the distance (A) is not exactly ¼" (6.4 mm), adjust the foot limit switch by performing the following steps:

   a. Using the foot function, raise or lower the foot section until the gap (A) measures ¼" (6.4 mm) between the foot section left-hand lift arm (B) and the hilow left-hand lift arm (C).

   b. Remove the top motor cover (refer to procedure 4.1).

   c. Using the small screwdriver, turn the screw (E) on the foot limit switch (LFD), located on the logic control P.C. board, until the green light comes on (see figure 4-10 on page 4-25).

   NOTE:
   The green light indicates the maximum limit of the foot section's travel. If the green light is out, the foot section can travel farther until the light comes on or the foot section reaches its mechanical limits.

   d. Continue to adjust the screw clockwise and counterclockwise in small increments, until an adjustment is attained between the green light coming on and going off.

   e. Using the measuring tape, measure the height of the foot section in the low position.

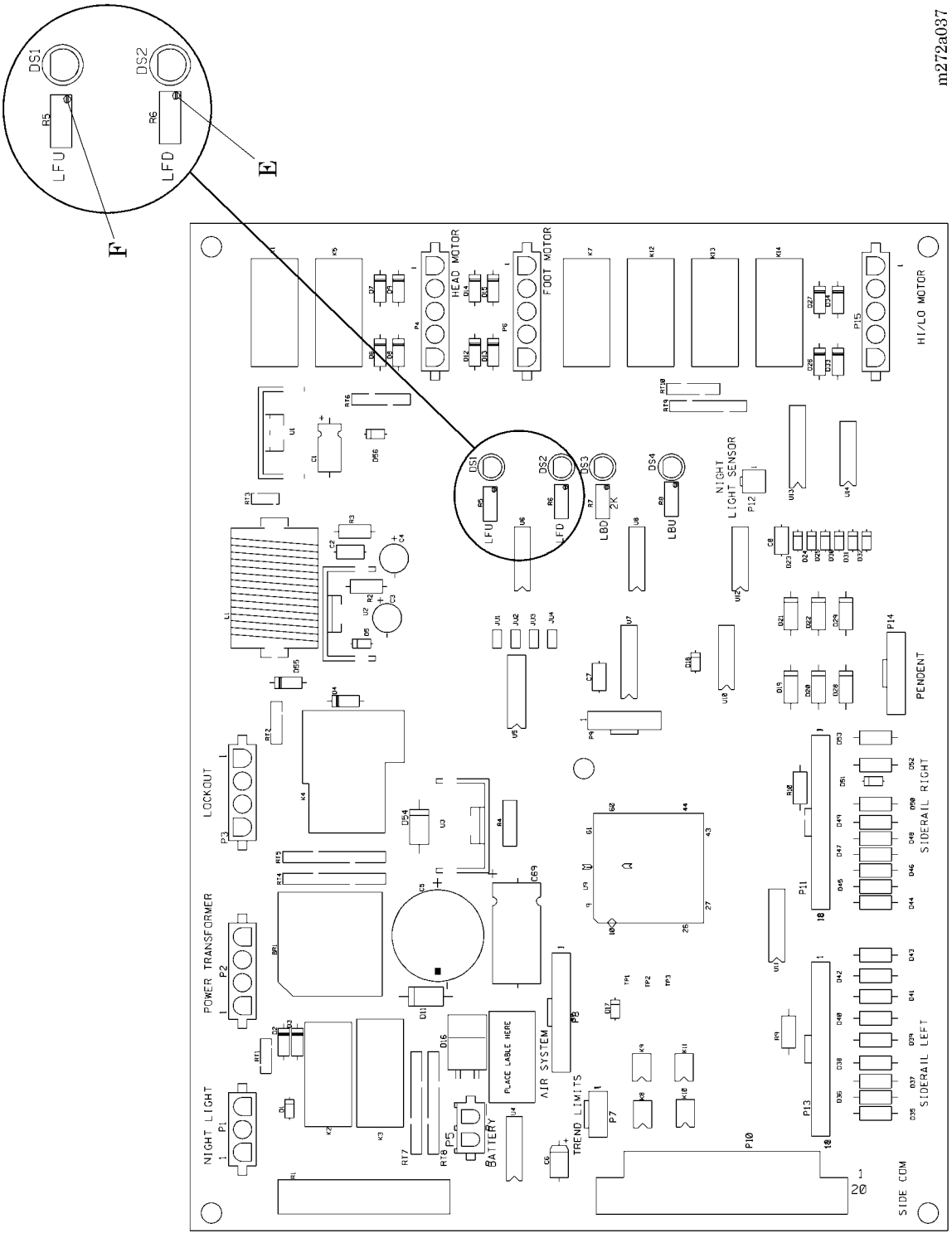
   f. Using the foot function, raise the foot section up 8¼" (209.6 mm) (D) from the measurement in the low position (see figure 4-9 on page 4-23).

   g. Using the small screwdriver, turn the screw (F) on the foot limit switch (LFU), located on the logic control P.C. board, until the green light comes on (see figure 4-10 on page 4-25).

   h. Continue to adjust the screw clockwise and counterclockwise in small increments, until an adjustment is attained between the green light coming on and going off.

   i. Using the foot function, raise and then lower the foot section.

Figure 4-10. Logic Control P.C. Board—P/N 68121



j. Check the gap (A) between the foot section left-hand lift arm (B) and the hilow left-hand lift arm (C) at the low position. Verify that the distance (A) is exactly ¼" (6.4 mm).

k. Repeat step a through step j until the correct foot level position is obtained.

2. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

4.8 CPR Release

Tools required: Adjustable wrench

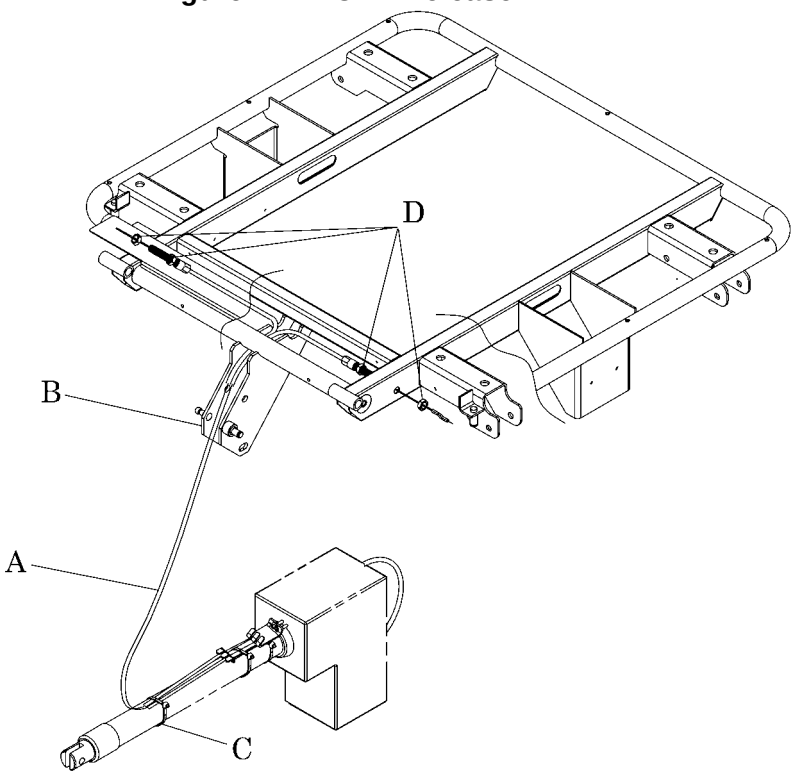
Adjustment

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the hilow function, place the bed in a mid-height position.
4. Using the head function, raise the head section to its highest position.
5. Ensure that the siderails are in the up position.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

6. Unplug the bed from its power source, and engage the lockout control.
7. Remove the top motor cover (refer to procedure 4.1).
8. Ensure that the CPR cables (A) are routed inside the head section weldment (B) (see figure 4-11 on page 4-27).

Figure 4-11. CPR Release



9. Ensure that the CPR cables (A) are secured **loosely** with the cable tie (C) located on the head drive motor assembly.

NOTE:
The cable tie should be snug enough to secure the cable, but not tight enough to pinch the cable sheath.

10. Using a wrench, adjust the CPR cable tensioning nuts (D) until the CPR release works properly on both sides of the bed.

11. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

4.9 Trend-Like Position Sensing Switch

Tools required: 5/16" wrench

There are two contact-type microswitches installed in the Trend-Like position mechanism. Only one switch requires adjustment. Proper adjustment of the Trend-Like position sensing switch (TS) keeps the bed from going too low while in the Trend-Like position. The Trend-Like position handle switch (TH) installed in the release arm mechanism is activated whenever the Trend-Like position handle is pulled and does not require adjustment.

Adjustment

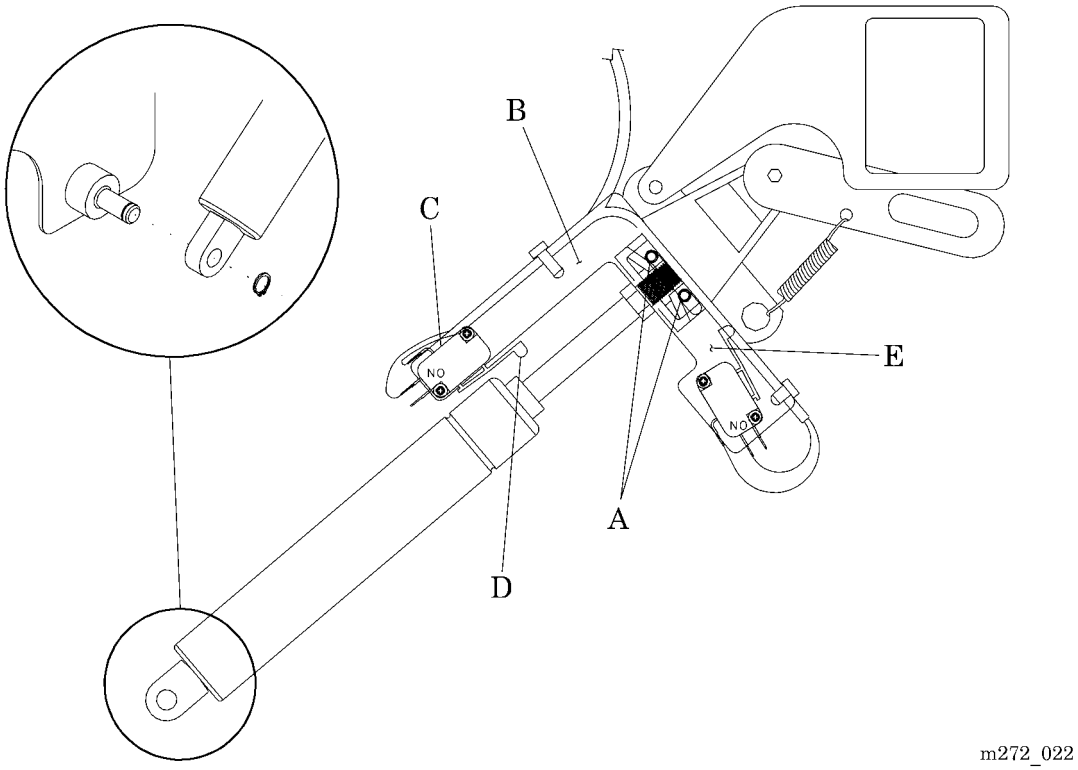
1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the hilow function, place the bed in a mid-height position.
4. Using the head function, raise the head section to its highest position.
5. Ensure that the siderails are in the up position.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

6. Unplug the bed from its power source, and engage the lockout control.
7. Remove the top motor cover (refer to procedure 4.1).
8. If the bed is equipped with the optional air system, the 5/16" Trend-Like position switch adjusting screws are accessible. However, easier access may be obtained by removing the air package (refer to procedure 4.20).
9. Using a 5/16" wrench, loosen the two screws (A) that secure the switch bracket (B) to the Trend-Like position release mechanism (E) (gas head and release lever) (see figure 4-12 on page 4-30).
10. Using the Trend-Like position handle, place the bed in the Trend-Like position while observing the actuator arm (D) of the TS switch (C).

NOTE:
When the bed is in the Trend-Like position, the TS switch should be activated by the Trend-Like position gas spring cylinder.

Figure 4-12. Trend-Like Position Assembly



11. Ensure that the actuator arm (D) is fully activated. (The arm is fully activated when the switch makes an audible click.)

12. Using a 5/16" wrench, tighten the two screws (A) that secure the switch bracket (B) to the Trend-Like position release mechanism (E).

13. After the adjustment is complete, ensure that the Trend-Like position system is operating correctly. See “Function Checks” on page 2-6.

14. Reverse the removal procedures to reinstall the optional air system (if so equipped) and the top motor cover.

15. Ensure that all Trend-Like functions work properly. See “Function Checks” on page 2-6.

4.10 Trend-Like Position Gas Spring

Tools required: 11/16" wrench Split-ring removal tool

WARNING:
The head end of the main frame is supported by the two Trend-Like position gas springs. Any servicing will require that a support device be placed just beneath the head end of the main frame. Failure to do so could result in personal injury or equipment damage.

Removal

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the head function, raise the head section to the high position

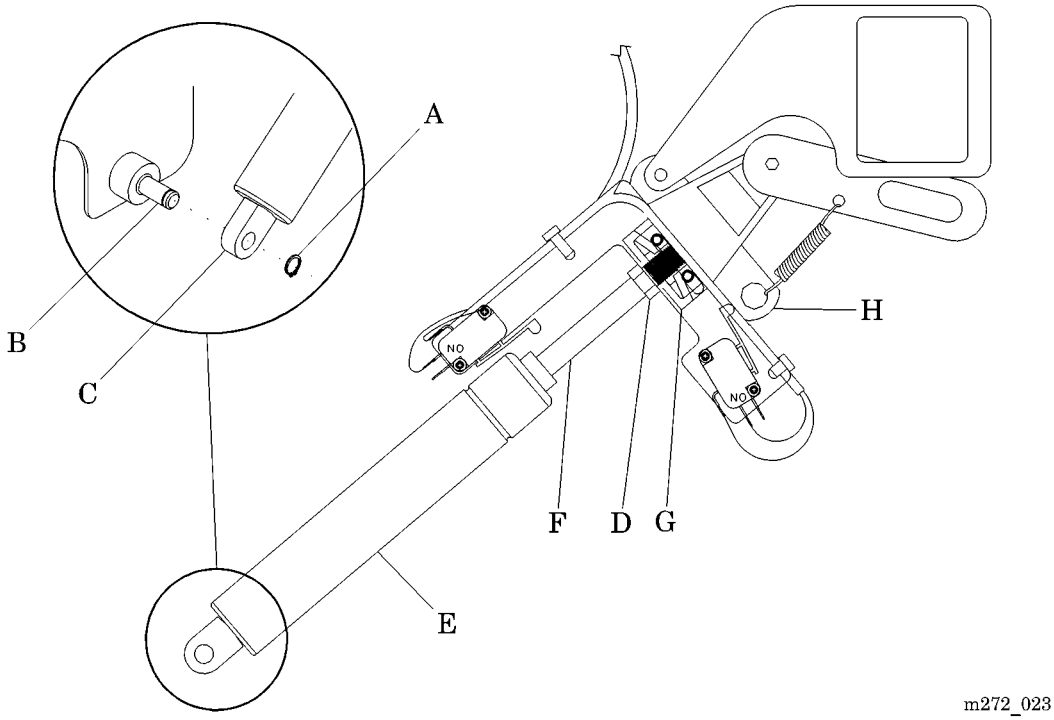
SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

4. Unplug the bed from its power source.
5. Remove the top motor cover (refer to procedure 4.1).
6. Using the split-ring removal tool, remove the split-ring (A) from the post (B) at the cylinder end (C) of the Trend-Like position gas spring (E) (see figure 4-13 on page 4-32).
7. Slide the cylinder end (C) of the Trend-Like position gas spring (E) off the post (B).

NOTE:
It may be necessary to apply upward force on the head end of the main frame to free the cylinder from the post.

8. Using the 11/16" wrench, loosen the jam nut (D) on the rod end (F) of the gas spring (E).
9. Turn the rod end (F) counterclockwise to remove it from the release assembly (G).

Figure 4-13. Trend-Like Position Gas Spring Assembly



Replacement

1. Spin the jam nut (D) all the way down on the new gas spring's rod end (F).
2. Thread the rod end (F) of the new gas spring (E) into the release assembly (G) until the plunger in the end of the rod just touches, or is no more than 1/16" away from the release arm (H).
3. Using the 11/16" wrench, tighten the jam nut (D) to lock the rod end (F) in this position.
4. Slide the cylinder end (C) of the Trend-Like position gas spring (E) onto the post (B), and install the split-ring (A) to secure it.
5. Check for proper Trend-Like position operation by activating the Trend-Like position handle.
6. Ensure that the gas springs release when the handle is in the middle of its travel.
7. Install the top cover over the drive system.
8. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

4.11 Head Section Gas Spring and Damper (CPR Assist)

Tools required: T25 Torx®[1] head bit, Ratchet, Needle nose pliers, Screwdriver

Removal

1. Perform step 1 through step 5, step 8, and step 9 of "Head Drive Motor Assembly" on page 4-17.

WARNING:
Do not attempt to remove the gas spring with the head section fully raised and the spring compressed. Lower the head section until the cylinder of the gas spring is free in the slide bracket of the main frame, and support the head section securely before removing the cotter pins and clevis pins. Failure to do so could result in personal injury or equipment damage.

2. Lower the head section frame (A) until the cylinder end of the gas spring (D) is free in the main frame slide bracket (F). Support the head section frame securely (see figure 4-14 on page 4-34).

3. Using the needle nose pliers, remove the cotter pins (B) from the two clevis pins (C) that secure the head section gas spring (D) and damper (E) cylinder ends to the bed frame weldment (F).

4. Using the screwdriver, remove the two e-rings (G) that secure the head section gas spring (D) and damper (E) rod ends to the head section frame weldment (H).

5. Remove the head section gas spring (D) and damper (E) from the bed.

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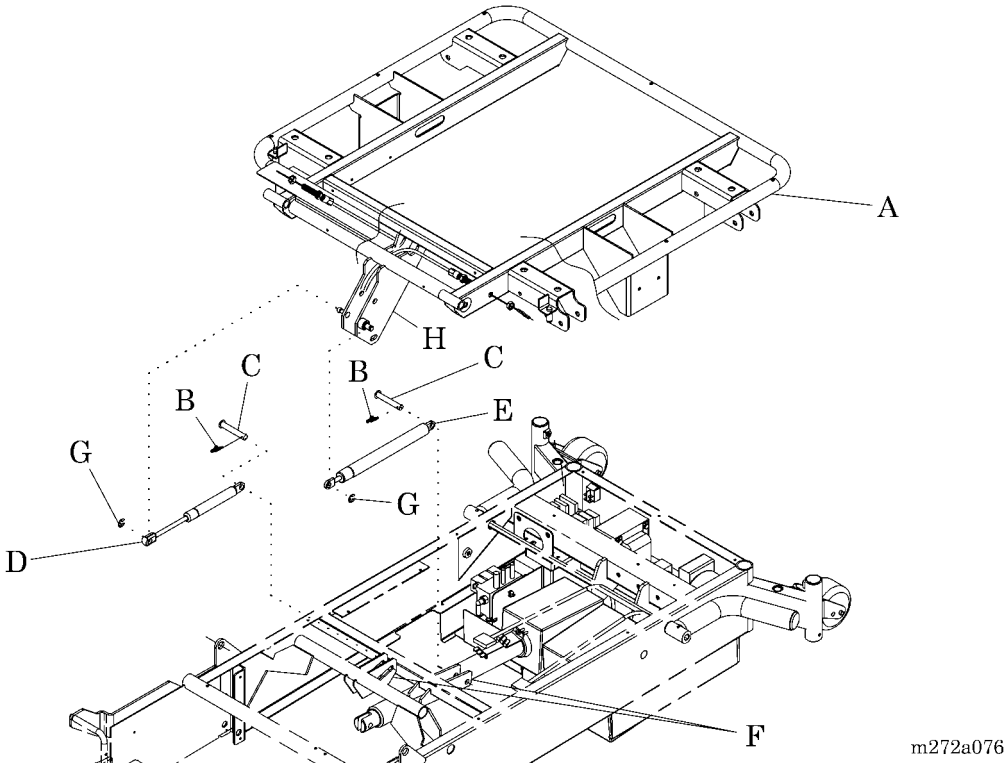
Figure 4-14. Head Section Gas Spring and Damper (CPR Assist)



Replacement

1. To install the replacement head section gas spring (D) and damper (E), reverse the removal procedure.

2. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

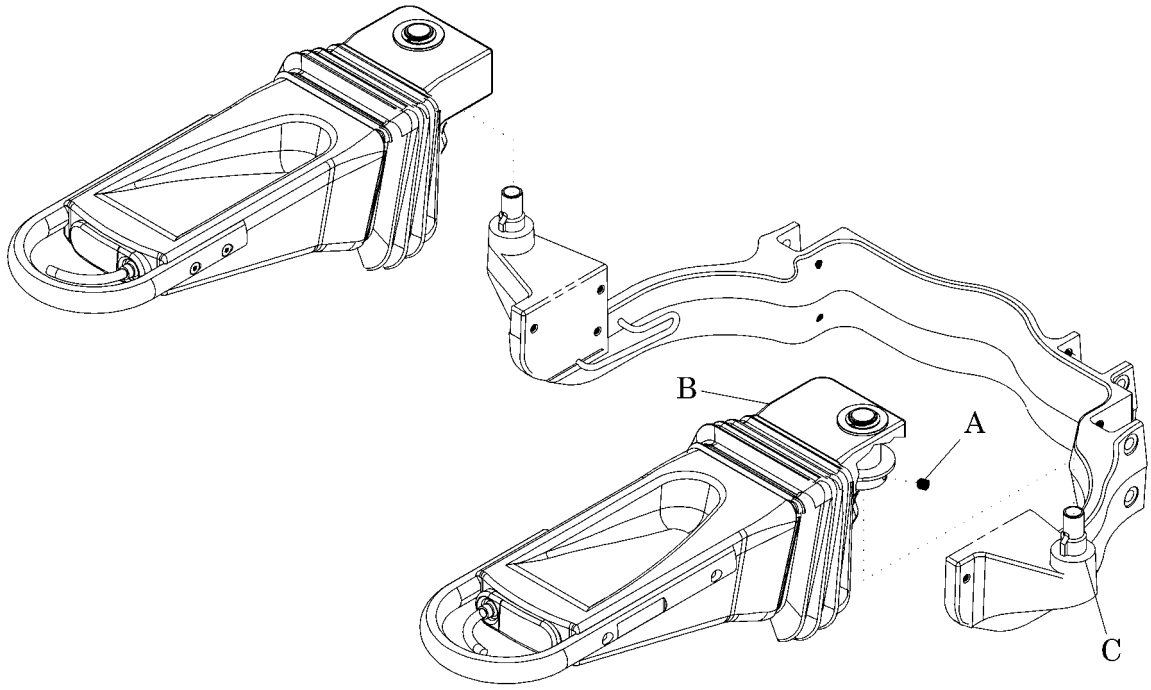
4.12 Foot Support Module

Tools required: 5/32" Allen™[1] wrench, 7/16" wrench, T25 Torx®[2] head bit, Ratchet

Removal

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Remove the foot section from the bed. Refer to “Foot Section (Lift Off)” on page 4-42 or “Foot Section (Slide Off)” on page 4-44.
4. Using the Allen™ wrench, remove the set screw (A) that secures the foot support module (B) to the yoke assembly (C) (see figure 4-15 on page 4-35)
5. Remove the foot support module (B) from the yoke assembly (C).

Figure 4-15. Foot Support Module



1. Allen™ is a trademark of Industrial Fasteners, Inc.
2. Torx® is a registered trademark of Textron, Inc.

Replacement

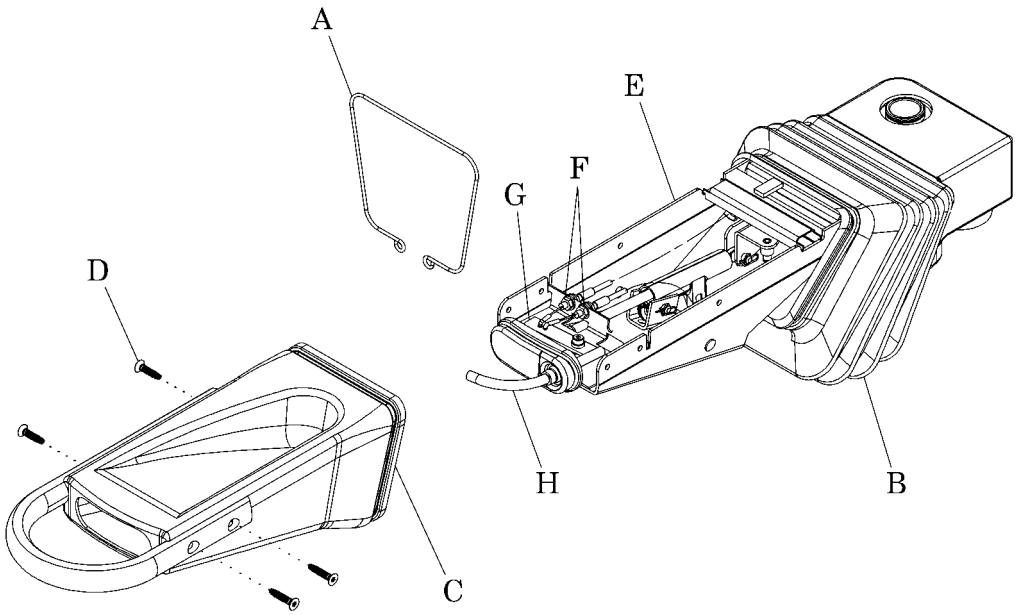
1. To install the replacement foot support module (B), reverse the removal procedure.

2. To ensure proper operation of the Affinity® Three Birthing Bed, perform the "Function Checks" on page 2-6.

Adjustment

1. Grasp the loops at the bottom of the bellows wireform (A), pull it open and lift it off the foot support bellows (B) and the foot support heel cup (C) (see figure 4-16 on page 4-36).

Figure 4-16. Disassembled Foot Support



2. Using the ratchet and the T25 Torx®[1] head bit, remove the four screws (D) attaching the foot support heel cup (C) to the foot rest weldment (E).

3. Remove the foot support heel cup (C) from the foot rest weldment (E) and the foot support bellows (B).

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4. Using the 7/16" wrench, adjust the cable tensioning nuts (F) so that the cable ends ride freely in the mounting holes of the release handle weldment (G) without binding.

5. Reassemble the foot support heel cup (C), Torx® head screws (D), and bellows wireform (A) to the foot rest weldment (E) and the foot support bellows (B).

6. Ensure that the foot support release handle (H) functions properly.

4.13 Night Light and Cable Assembly

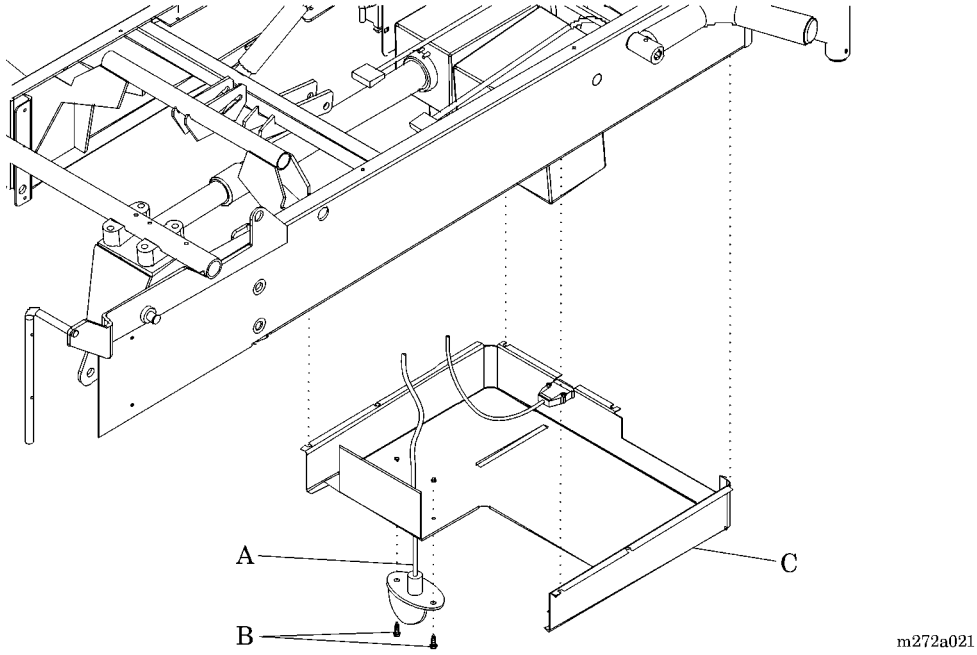
Tools required: T25 Torx®[1] head bit Ratchet

Removal

1. Remove the top motor cover (refer to procedure 4.1).

2. Disconnect the night light and cable assembly (A) from logic control P.C. board connector P1 (see figure 4-17 on page 4-38).

Figure 4-17. Night Light and Cable Assembly



3. Using a ratchet and T25 Torx® head bit, remove the two screws (B) that secure the night light and cable assembly (A) to the bottom cover (C).

4. Remove the night light and cable assembly (A) from the bed.

Replacement

1. To install the replacement night light and cable assembly (A), reverse the removal procedure.

2. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

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4.14 Mattress Assembly

Tools required: None

Removal

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Carefully lift the mattress from the head end of the bed.

CAUTION:
Do not pull on the mattress material when unfastening the mattress retaining snaps. Unfasten the mattress retaining snaps at the snap location. Failure to do so could result in equipment damage.

4. Locate and unfasten the two mattress retaining snaps beneath the seat section.
5. If the mattress has air bladders, disconnect the two hoses located beneath the seat section.
6. Lift the side panels on the foot section and unfasten the four snaps on the foot mattress.

Replacement

1. To install the replacement mattress, reverse the removal procedure.
2. Ensure that the two air hoses are properly installed below the seat section.
3. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

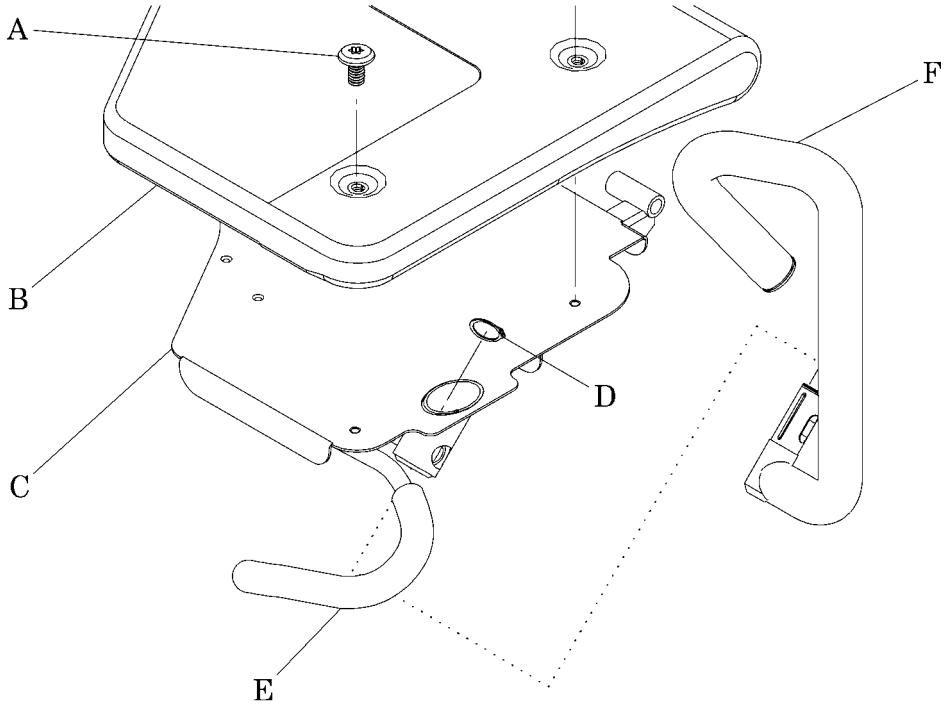
4.15 Labor Grips

Tools required: T25 Torx®[1] head bit Ratchet
Lubri-film spray (P/N 36958)
External snap-ring removal tool

Removal

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Remove the mattress to gain access to the seat panel. Refer to section the "Mattress Assembly" on page 4-39.
4. Using a ratchet and T25 Torx® head bit, remove the screws (A) that secure the seat panel (B) to the seat pan (C) (see figure 4-18 on page 4-40).

Figure 4-18. Labor Grips



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5. Using the external snap-ring removal tool, remove the external snap ring (D) from the pull handle.

6. Pull and hold the release (E) for the labor grip handle (F).

7. Slide the labor grip handle (F) from its socket.

Replacement

1. To install the new labor grip handle (F), reverse the removal procedure.

2. Apply lubri-film spray (P/N 36958) to the arm of the labor grip that slides into the socket.

3. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

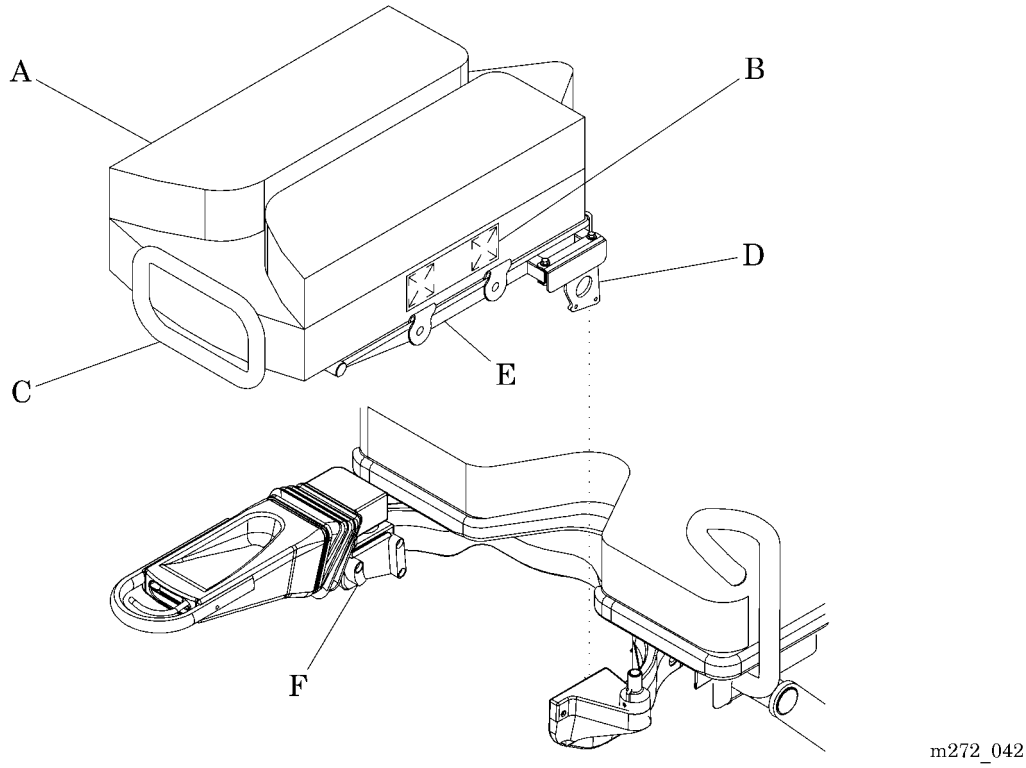
4.16 Foot Section (Lift Off)

Tools required: None

Removal

1. Pivot the foot mattress side panels (A) up (see figure 4-19 on page 4-42).

Figure 4-19. Foot Section (Lift Off)



2. Grasp the mattress handles (B) located on both sides of the mattress.
3. Pull straight up and then toward yourself.
4. Stand the foot section up on the pull handle (C) base.

Replacement

WARNING:
Failure to properly mount the foot section to the yoke latches could result in equipment damage or personal injury.

1. Grasp the mattress handles (B) located on both sides of the mattress.
2. Align the foot section slides (D) with their receptacles (F) on the bed.
3. Lower the foot section (E) onto the bed.
4. Tug upward on the pull handle (C) to verify that the foot section is securely mounted to the bed.

4.17 Foot Section (Slide Off)

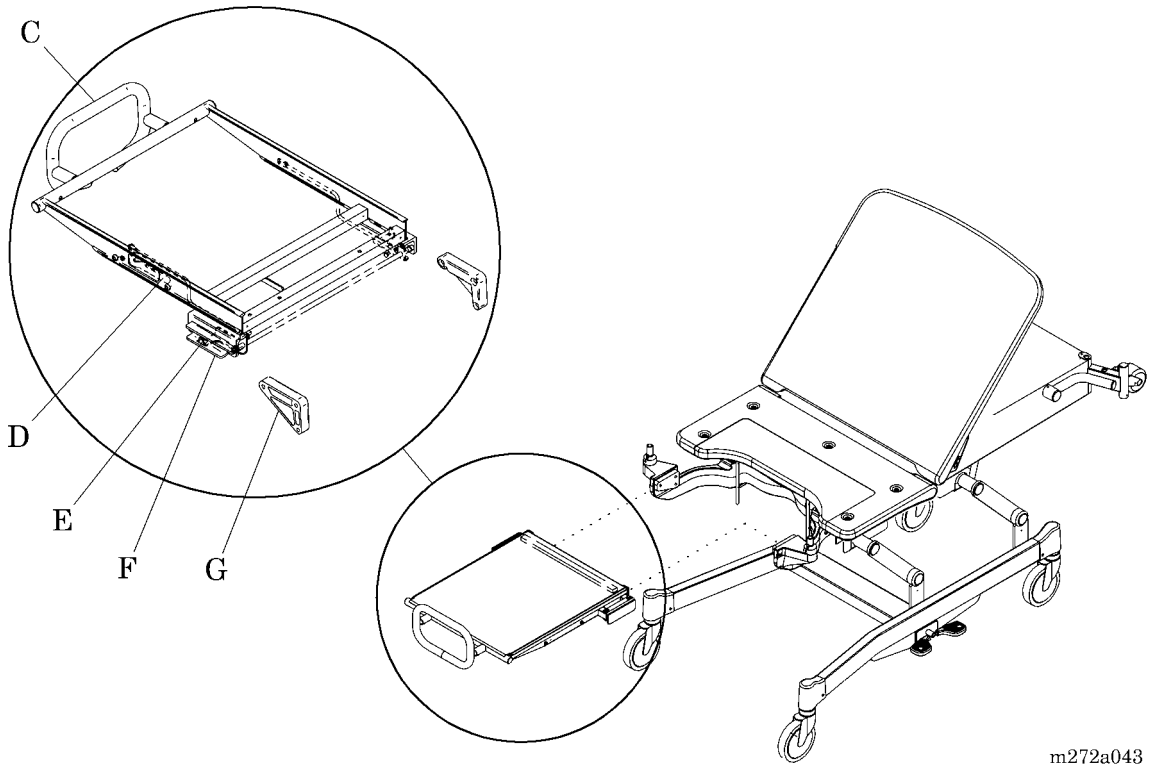
Tools required: None

Removal

1. Pivot the foot mattress side panels (A) up (see figure 4-19 on page 4-42).

2. Pull the foot section release handles (D) to release the latch mechanisms (E) from the channel slides (F) (see figure 4-20 on page 4-44).

Figure 4-20. Foot Section (Slide Off)



3. Grasp the mattress handles (B) located on both sides of the mattress (see figure 4-19 on page 4-42).

4. Slide the foot section straight out toward yourself.

NOTE:
The foot section pull handle doubles as a base to allow the foot section to stand alone.

5. Stand the foot section up on the pull handle (C) base.

Replacement

WARNING:
Failure to properly mount the foot section to the yoke slide brackets could result in equipment damage or personal injury.

1. Grasp the mattress handles (B) located on both sides of the mattress (see figure 4-19 on page 4-42).
2. Align the foot section channel slides (F) with the mounting brackets (G) on the bed(see figure 4-20 on page 4-44).
3. Slide the foot section onto the bed.
4. Ensure that the foot section latch mechanism (E) locks into the channel slide (F).
5. Tug out on the pull handle (C) to verify that the foot section is securely mounted to the bed.

4.18 Line Voltage Fuses

Tools required: Small screwdriver

Three mains fuses protect the high voltage circuit. Two fuses (line voltage fuses) are located in the fuse holder secured to the head end of the main frame. The third fuse is located on the air system control P.C. board.

WARNING:
Adhere to all electrical safety precautions when servicing the bed's electrical system. Failure to do so could result in personal injury or equipment damage.

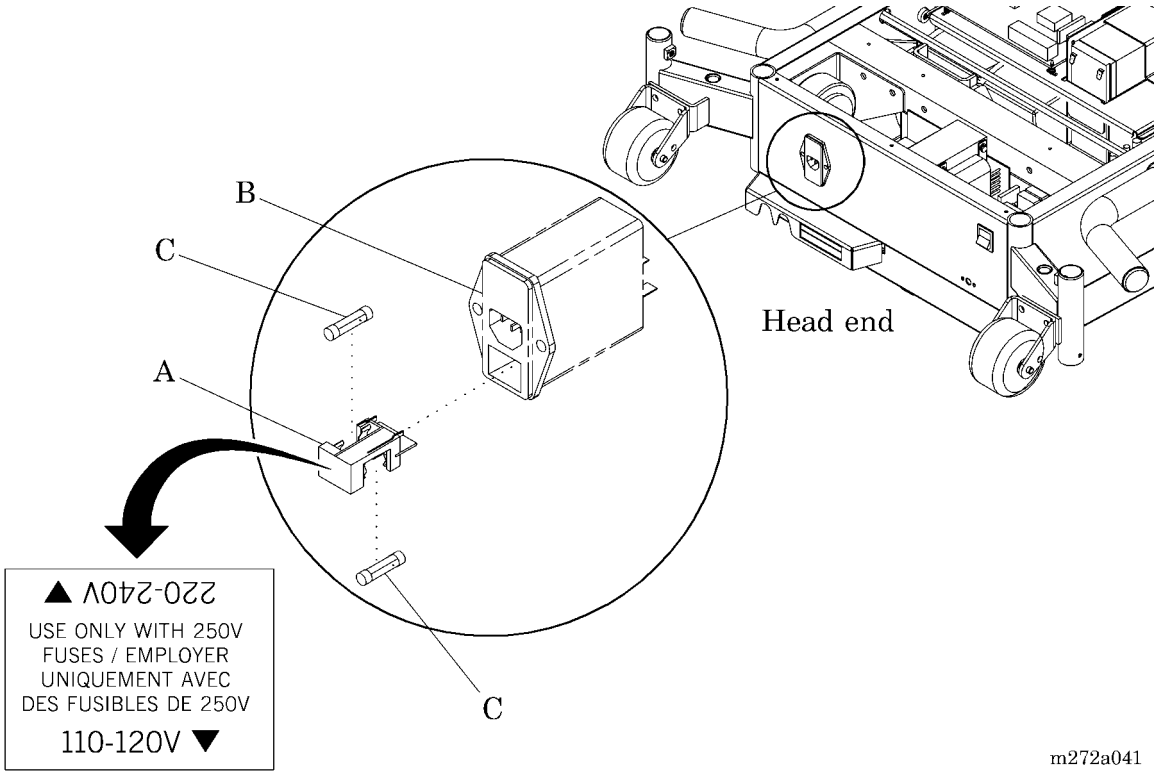
Removal

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the head function, raise the head section to the high position.
4. Using the hilow function, raise the bed to the high position.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

5. Unplug the bed from its power source, and engage the lockout control.
6. Remove the top motor cover (refer to procedure 4.1).
7. Using the screwdriver, remove the fuse housing (A) from the power entry module (B) (see figure 4-21 on page 4-47).
8. Remove the appropriate line voltage fuse (C) from the fuse housing (A).

Figure 4-21. Fuse Location



Replacement

CAUTION:
Ensure that the fuse housing is properly oriented for the voltage rating (110-120V or 220-240V) on the bed that you are servicing. Failure to do so could result in equipment damage.

1. Orient the fuse housing properly for the voltage rating (110-220V or 220-240V) on the bed you are servicing.

2. Insert a serviceable line voltage fuse (C) into the fuse housing (A).

3. To install the replacement line voltage fuse (C), reverse the removal procedures.

4. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

4.19 Battery Assembly

Tools required: T25 Torx®[1] head bit, Ratchet, VOM, Small screwdriver

WARNING:
Adhere to all electrical safety precautions when servicing the bed's electrical system. Failure to do so could result in personal injury or equipment damage.

Batteries

Removal

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the head function, raise the head section to the high position.
4. Using the hilow function, raise the bed to the high position.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

5. Unplug the bed from its power source, and engage the lockout control.
6. Remove the top motor cover (refer to procedure 4.1).

CAUTION:
Do not cut or remove the cable ties that secure the battery leads to the electronics pan. This ensures the proper connection of the batteries during the replacement procedure. Possible equipment damage could occur if the cable ties are removed.

7. Unplug the battery cable assembly (A) from logic control P.C. board connector P5 (see figure 4-22 on page 4-49).
8. Unplug the battery cable assemblies (A and B) from the four connection points (C) on the two batteries (D).

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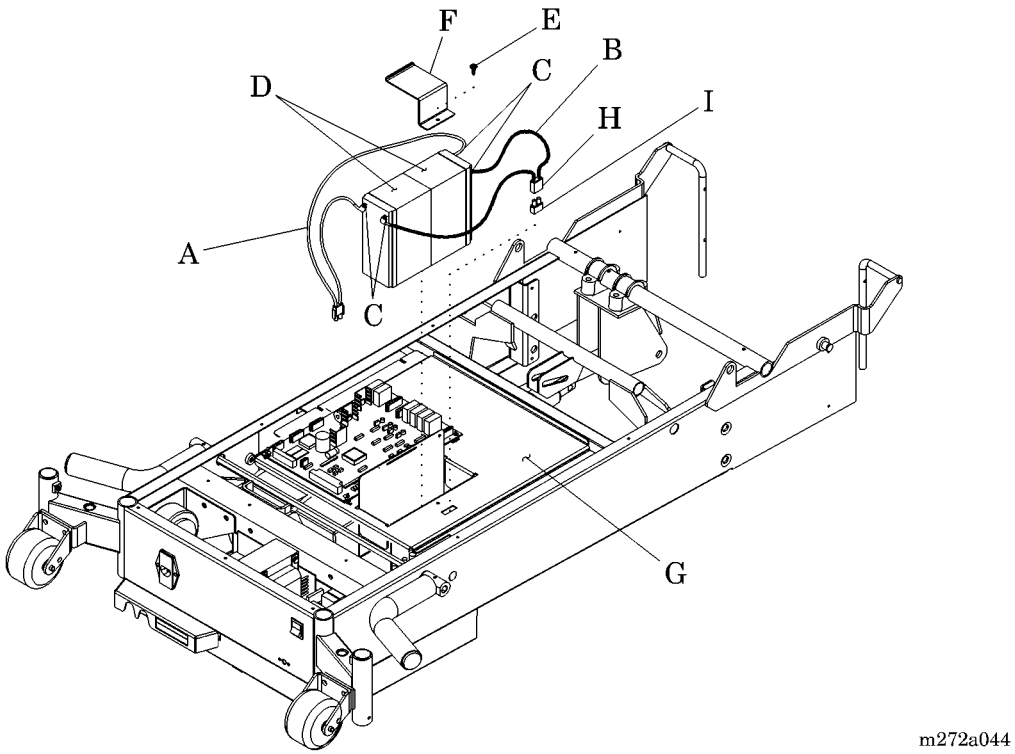
Figure 4-22. Battery Assembly



9. Using a ratchet and T25 Torx®[1] head bit, remove the screw (E) that secures the battery holder bracket (F) to the electronics plate weldment (G).

10. Remove the two batteries (D) from the electronics plate weldment (G).

Replacement

1. To install the replacement batteries (D), reverse the removal procedures.

2. To ensure proper operation of the Affinity® Three Birthing Bed, perform the "Function Checks" on page 2-6.

Battery Fuse

Removal

1. Carefully pull the battery fuse housing (H) from the electronics plate weldment (G).

2. Remove the battery fuse (I) from the battery fuse housing (H).

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Replacement

1. To install the replacement battery fuse (I), reverse the removal procedures.
2. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

Battery Charge Circuit

Beds equipped with a 65345 logic control P.C. board and 67208 interface P.C. board may require adjustment of the battery charge circuit for optimal battery function. Beds equipped with the 68121 logic control P.C. board will **not** require adjustment of the battery charge circuit.

WARNING:
Adhere to all electrical safety precautions when servicing the bed's electrical system. Failure to do so could result in personal injury or equipment damage.

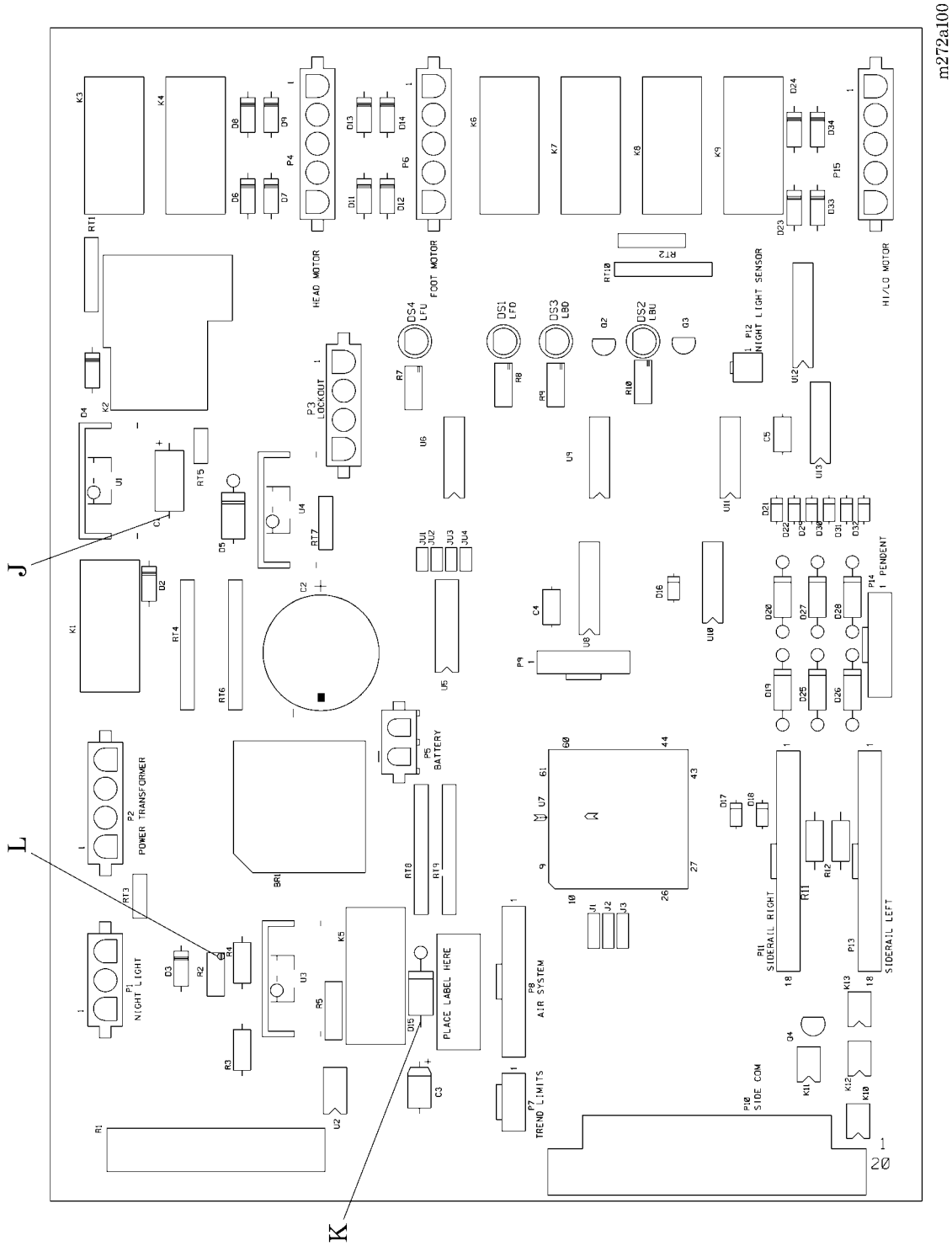
Adjustment

1. Unplug the bed from its power source.
2. Unplug the battery cable assembly (A) from logic control P.C. board connector P5 (see figure 4-22 on page 4-49).
3. Set your VOM to measure V DC.
4. Connect the ground lead of the VOM to the negative side of C1 (J) (see figure 4-23 on page 4-51).
5. Connect the positive lead of the VOM to the positive side of D15 (K).

NOTE:
The positive side of D15 is the side **without** a silver band.

6. Reconnect the bed to an appropriate power source.
7. Using the small screwdriver, turn the screw on potentiometer R2 (L) until the VOM reads between 27.6 and 28.0 V DC.
8. Unplug the bed from its power source.
9. Reconnect the battery cable assembly to P5.
10. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

Figure 4-23. Logic Control P.C. Board—P/N 65345



4.20 Bed Surface Air System Assembly

Tools required: Small wire cutters (2) ½" wrenches

NOTE:
When servicing the air system, it is important to ensure that the lumbar and seat inflate/deflate hoses are connected to the correct fittings on the air package. The hose from the left side of the bed is the lumbar hose; the hose from the right side is the seat hose.

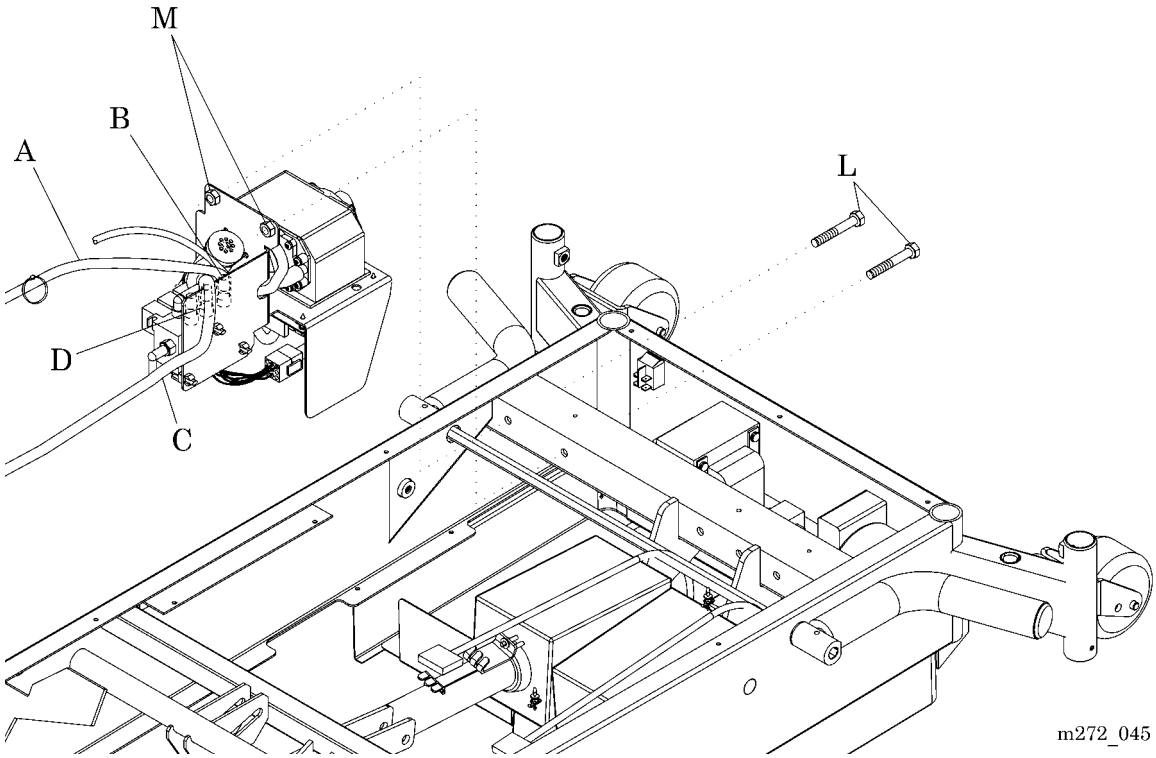
Removal

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the hilow function, raise the bed to the high position.
4. Using the head function, raise the head section to the high position.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

5. Unplug the bed from its power source, and engage the lockout control.
6. Remove the top motor cover (refer to procedure 4.1).
7. Remove the bottom motor cover (refer to procedure 4.2).
8. Disconnect the hose (A) leading from the right side of the mattress to the air manifold fitting (B) (see figure 4-24 on page 4-53).
9. Disconnect the hose (C) leading from the left side of the mattress to the air manifold fitting (D).

Figure 4-24. Bed Surface Air System Assembly



10. Disconnect the transformer assembly power cable from air system control P.C. board (F) connector P19 (E) (see figure 4-25 on page 4-54).

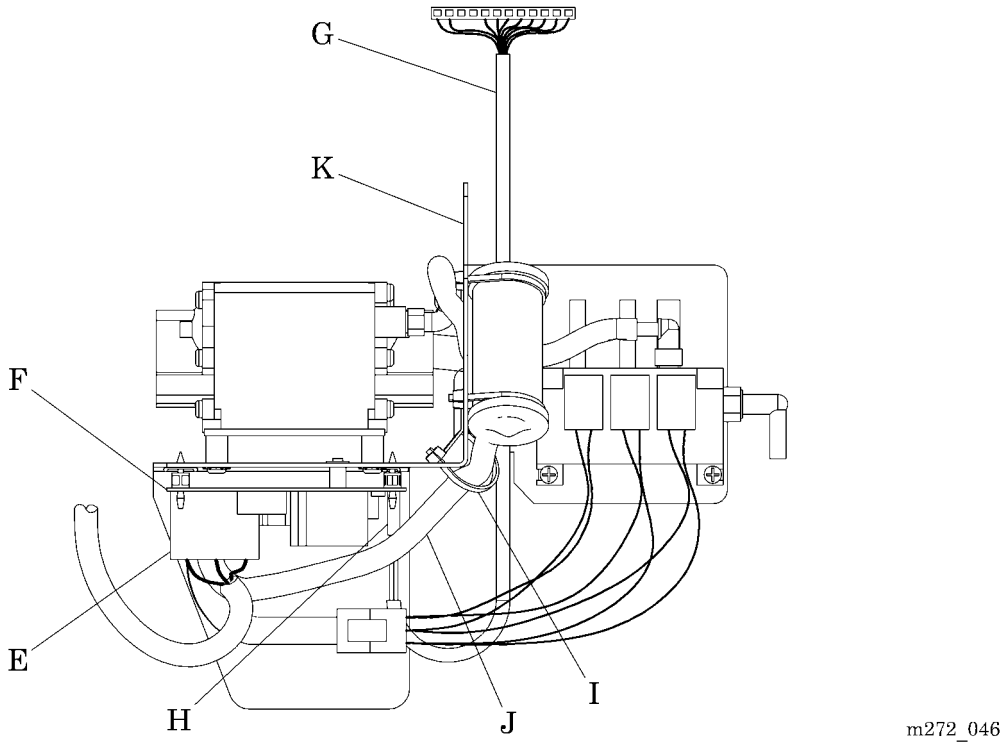
11. Disconnect the cable (G) from logic control P.C. board connector P8 to air system control P.C. board (F) connector P18 (H).

12. Using the small wire cutters, cut and remove the cable tie (I) that secures the linear pump power cable (J), air system power cable, and air system control P.C. board cable (G) to the mounting bracket (K).

13. Using the two ½" wrenches, remove the bolts (L) and nuts (M) that secure the air system to the bed frame (see figure 4-24 on page 4-53).

14. Remove the air system from the bed.

Figure 4-25. Bed Surface Air System Cable Connections



Replacement

1. To install the replacement air system, reverse the removal procedure.
2. Ensure that all air system functions work properly.
3. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

4.21 Air System Manifold Assembly

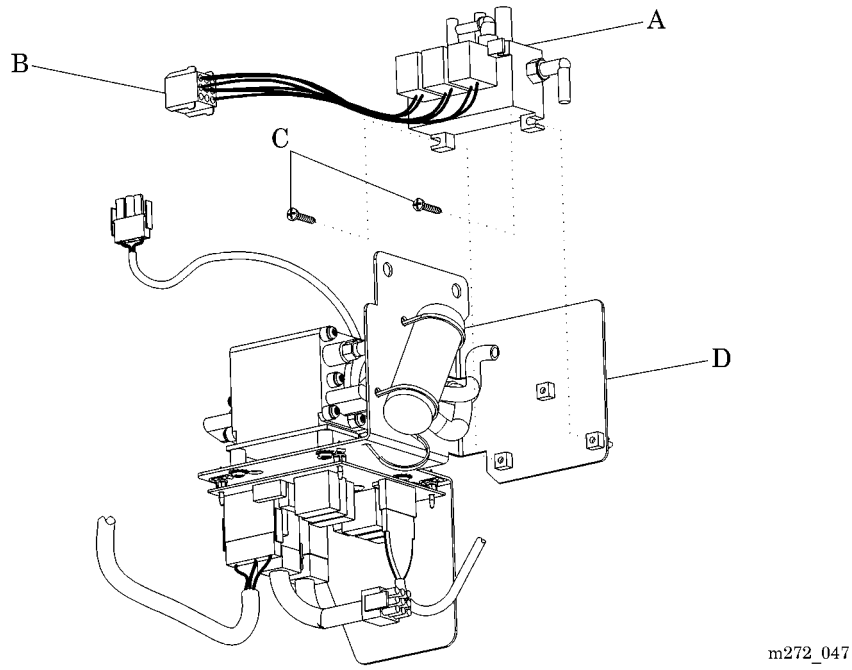
Tools required: Phillips head screwdriver

Removal

1. Remove the air system assembly (refer to procedure 4.20).

2. Disconnect the air hoses from the manifold assembly (A) (see figure 4-26 on page 4-55).

Figure 4-26. Air System Manifold Assembly



3. Identify and disconnect the wiring connectors (B) from the manifold assembly (A).

4. Using the phillips head screwdriver, remove the two screws (C) that secure the manifold assembly (A) to the mounting plate (D).

Replacement

1. To install the replacement manifold assembly (A), reverse the removal procedure.

2. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

4.22 Air System Control P.C. Board Assembly

Tools required: Phillips head screwdriver Needle nose pliers

Removal

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the hilow function, raise the bed to the high position.
4. Using the head function, raise the head section to the high position.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

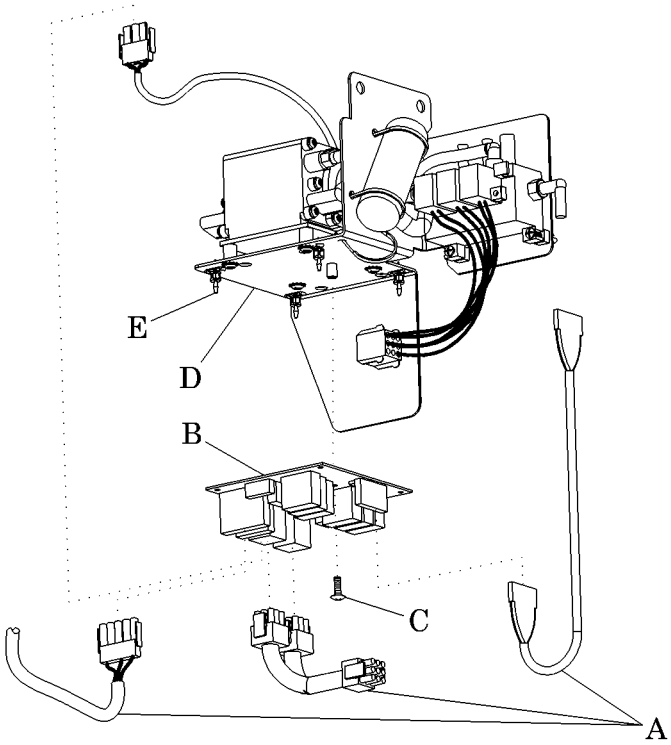
5. Unplug the bed from its power source.
6. Remove the bottom motor cover (refer to procedure 4.2).
7. Identify and disconnect all wiring connectors (A) from the air system control P.C. board (B) (see figure 4-27 on page 4-57).
8. Using the phillips head screwdriver, remove the screw (C) that secures the air system control board (B) to the air system bracket (D).
9. Using the needle nose pliers, compress the air system control P.C. board (B) mounting standoffs (E).

CAUTION:
To prevent component damage, ensure that your hands are clean, and **only** handle a P.C. board by its edges. Failure to do so could result in equipment damage.

CAUTION:
For shipping and storage, place the removed P.C. board in an antistatic protective bag. Failure to do so could result in equipment damage.

10. Handling it by its edges with clean hands, maneuver and remove the air system control P.C. board (B) from the bed. Place it in an antistatic protective bag.

Figure 4-27. Air System Control P.C. Board



Replacement

1. To install the replacement air system control P.C. board (B), reverse the removal procedures.

2. Ensure that the wiring connectors are firmly connected to the air system control P.C. board receptacles.

3. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

4.23 Logic Control P.C. Board Assembly

Tools required: Needle nose pliers Isopropyl alcohol

SHOCK HAZARD:
The voltage in the electrical system presents an electrical shock hazard. Perform standard electrical service procedures before attempting service within the P.C. board enclosure. Adhere to all electrical safety precautions when servicing the bed's electrical system. Failure to do so could result in personal injury or equipment damage.

Removal

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the hilow function, raise the bed to the high position.

NOTE:
If the hilow function is inoperable, skip step 3.

4. Using the head function, raise the head section to the high position. If the head function is inoperable, perform the following step:
   a. Pull the CPR handle, lift the head section far enough to gain access to the motor cover, and then release the CPR handle.

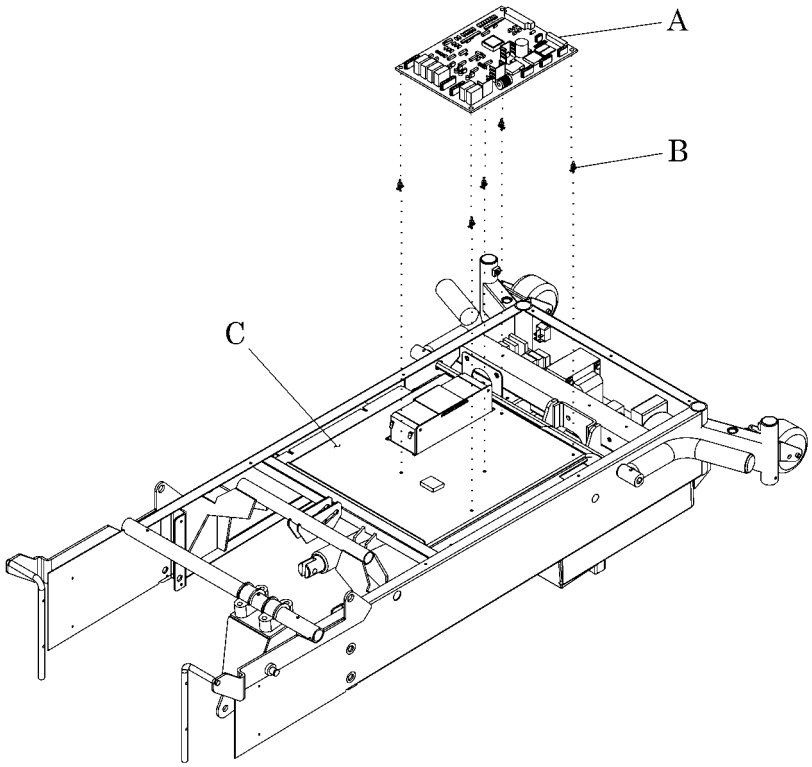
SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

5. Unplug the bed from its power source, and engage the lockout control.
6. Remove the top motor cover (refer to procedure 4.1).
7. Identify and disconnect the wiring connectors from the logic control P.C. board (A), beginning with the battery cable connection P5 (see figure 4-28 on page 4-59).

CAUTION:
To prevent component damage, ensure that your hands are clean, and **only** handle a P.C. board by its edges. Failure to do so could result in equipment damage.

8. Using the needle nose pliers, compress the locking tabs on the five logic control P.C. board mounting standoffs (B), pulling the logic control P.C. board (A) slightly up and over the locking tab on each mounting standoff.

Figure 4-28. Logic Control P.C. Board Assembly



CAUTION:
For shipping and storage, place the removed P.C. board in an antistatic protective bag. Failure to do so could result in equipment damage.

9. Handling the logic control P.C. board (A) by its edges with clean hands, maneuver and remove it from the electronics plate weldment (C).
   a. If replacing a 65345 logic control P.C. board and 67208 interface P.C. board, discard them.
   b. If replacing a 68121 logic control P.C. board, place it in an antistatic protective bag.

Modifying the Lockout Switch Cable

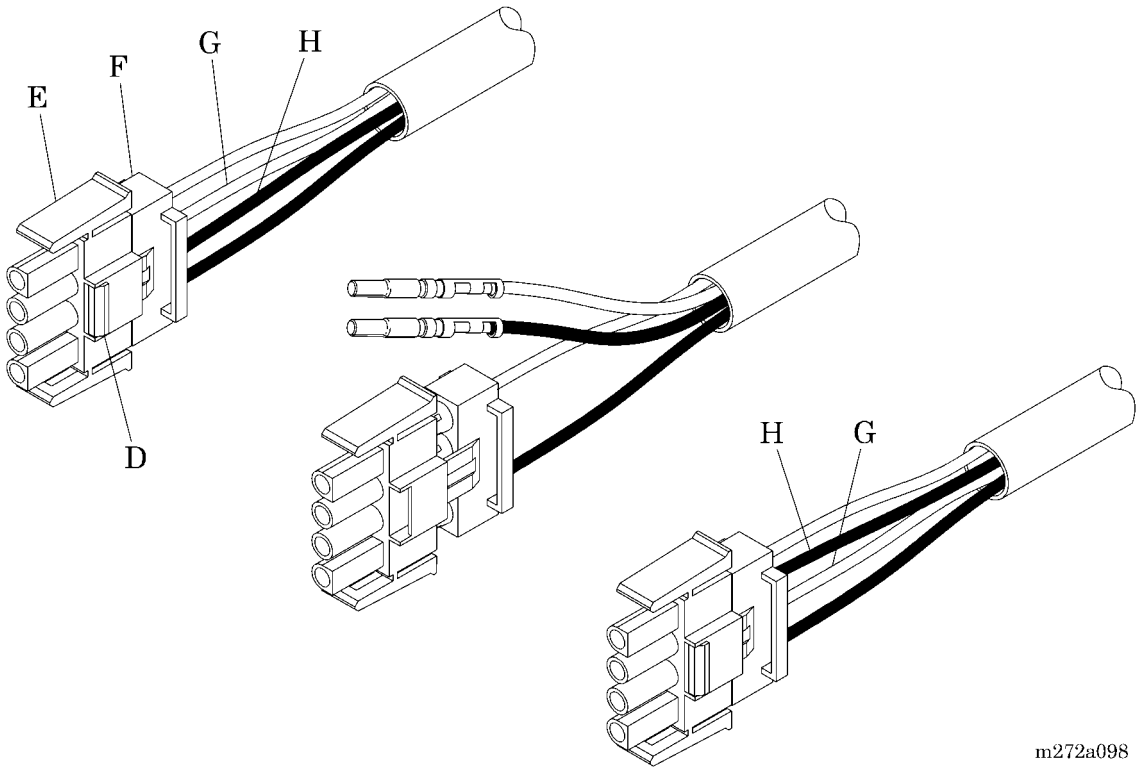
When replacing a 65345 logic control P.C. board and 67208 interface P.C. board with a 68121 logic control P.C. board, the lockout switch cable **must** be modified as follows:

1. Locate the P3 connector of the lockout switch cable. When used with a 65345 logic control P.C. board and 67208 interface P.C. board, the order of the four wires in the connector housing is red, red adjacent, and black, black adjacent (see figure 4-29 on page 4-60). Pin 1 may be either red or black.

NOTE:
If the order of the four wires in the connector housing is red, black, red, black alternating, the lockout switch cable has already been modified for use with a 68121 logic control P.C. board. Skip to “Replacement” on page 62.

2. Using the needle nose pliers, compress the locking tabs (D) holding the connector shell (E) and the backshell (F) of the plastic connector housing together, and pull the two shells about ¼" apart. This procedure unlocks the pins in the housing.

Figure 4-29. Lockout Switch Cable P3 Connector



3. Pull the red middle wire (G) with its attached pin, and the black middle wire (H) with its attached pin, out of the backshell (F).

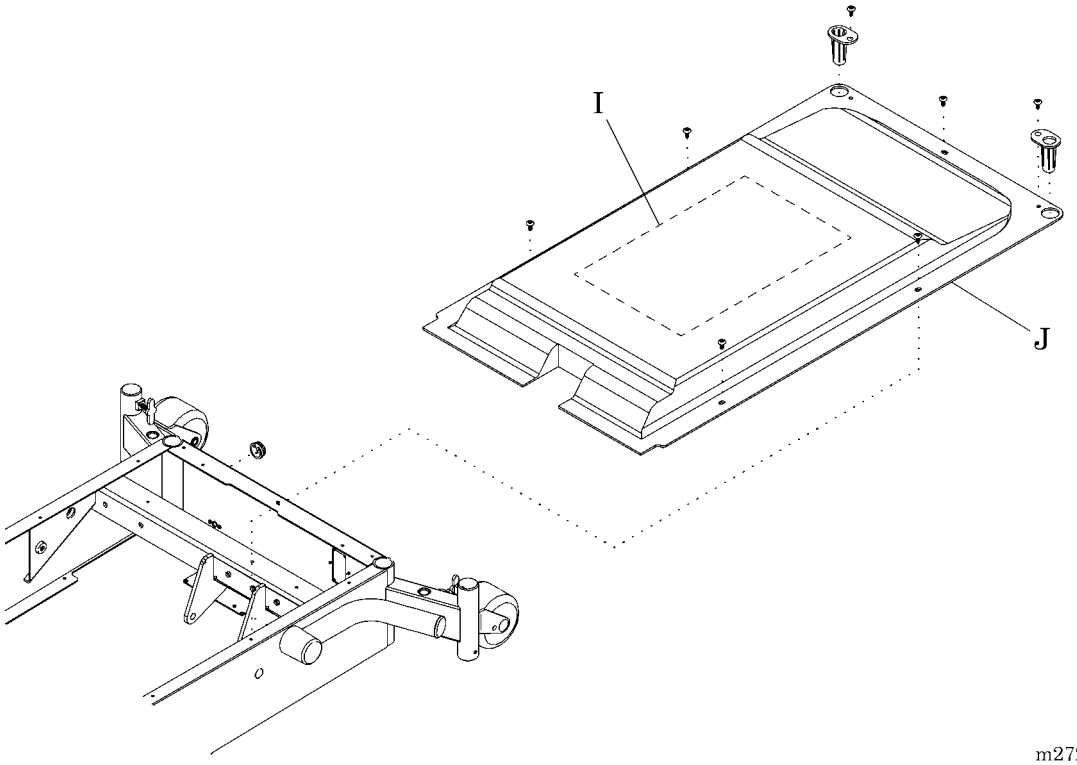
4. Reverse the order of the two middle wires and pins, and reinstall them into the backshell, pushing on each wire until you hear a click and the pin is seated tightly. The order of the four wires in the connector housing should now be red, black, red, black alternating, for use with a 68121 logic control P.C. board. Pin 1 may be either red or black.

5. Push the connector shell (E) and the backshell (F) together until you hear a click and the locking tabs (D) are locked, holding the two parts of the connector housing firmly together.

6. Clean the underside of the top motor cover with a cloth soaked in isopropyl alcohol, remove the protective backing from the 6399301 wiring diagram (I), and install the new wiring diagram in place of the existing wiring diagram located on the underside of the top motor cover (J) (see figure 4-30 on page 4-61).

NOTE:
It is not necessary to remove the old wiring diagram, as long as the new one covers it completely.

Figure 4-30. Logic Control P.C. Board Wiring Diagram



Replacement

1. To install the replacement logic control P.C. board (A), reverse the removal procedures, finishing with the battery cable connection P5.

2. Ensure that the wiring connectors are firmly connected to the logic control P.C. board (A) receptacles.

3. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

4.24 Transformer Assembly

Tools required: T25 Torx®[1] head bit Ratchet

SHOCK HAZARD:
The voltage in the electrical system presents an electrical shock hazard. Perform standard electrical service procedures before attempting service within the P.C board enclosure. Adhere to all electrical safety precautions when servicing the bed's electrical system. Failure to do so could result in personal injury or equipment damage.

Removal

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the head function, raise the head section to the high position.
4. Using the hilow function, raise the bed to the high position.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

5. Unplug the bed from its power source, and engage the lockout control.
6. Remove the top motor cover (refer to procedure 4.1).
7. Identify and disconnect the wiring connectors from the transformer assembly (A) (see figure 4-31 on page 4-64).
8. Using the ratchet and T25 Torx® head bit, remove the four Torx® screws (B) that secure the transformer assembly (A) to the bed frame (C).
9. Maneuver and remove the transformer assembly (A) from the bed.

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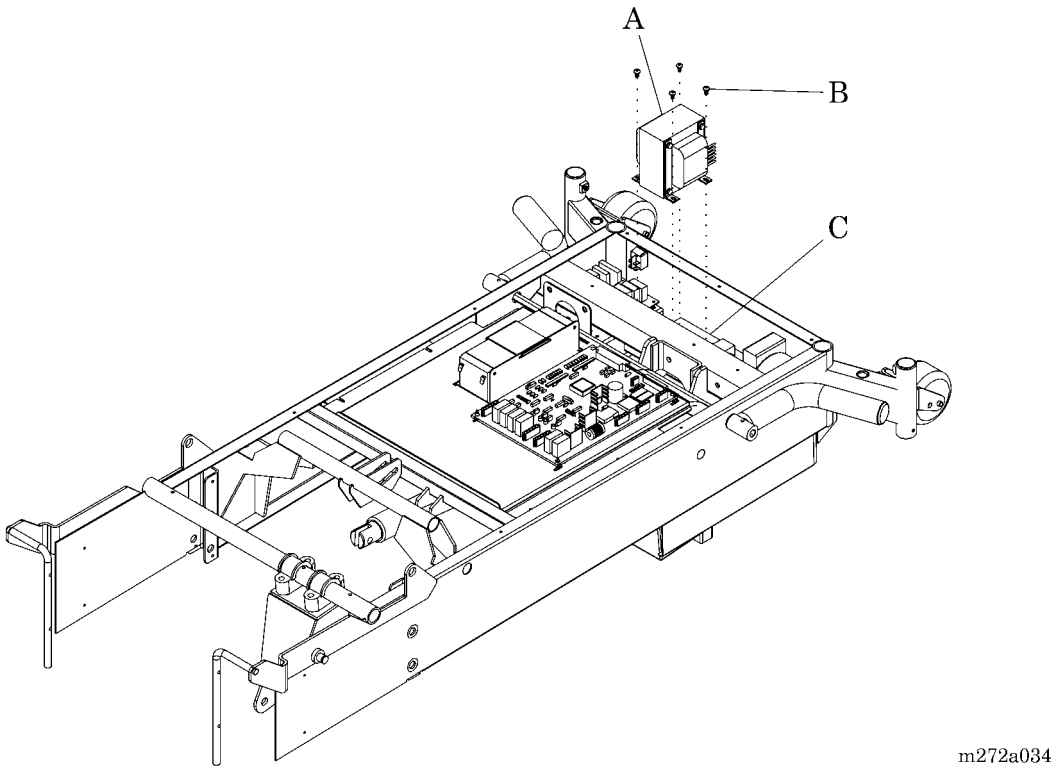
Figure 4-31. Transformer Assembly



Replacement

1. To install the replacement transformer assembly (A), reverse the removal procedures.

2. Ensure that the wiring connectors are firmly connected to the transformer assembly (A).

3. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

4.25 Auxiliary Transformer Assembly

Tools required: T25 Torx®[1] head bit Ratchet

SHOCK HAZARD:
The voltage in the electrical system presents an electrical shock hazard. Perform standard electrical service procedures before attempting service within the P.C. board enclosure. Adhere to all electrical safety precautions when servicing the bed's electrical system. Failure to do so could result in personal injury or equipment damage.

Removal

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the head function, raise the head section to the high position.
4. Using the hilow function, raise the bed to the high position.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

5. Unplug the bed from its power source, and engage the lockout control.
6. Remove the top motor cover (refer to procedure 4.1).
7. Identify and disconnect the wiring connectors (A) from the auxiliary transformer assembly (B) (see figure 4-32 on page 4-66).
8. Using the ratchet and T25 Torx® head bit, remove the two Torx® screws (C) that secure the auxiliary transformer assembly (B) to the bed frame (D).
9. Maneuver and remove the auxiliary transformer assembly (B) from the bed.

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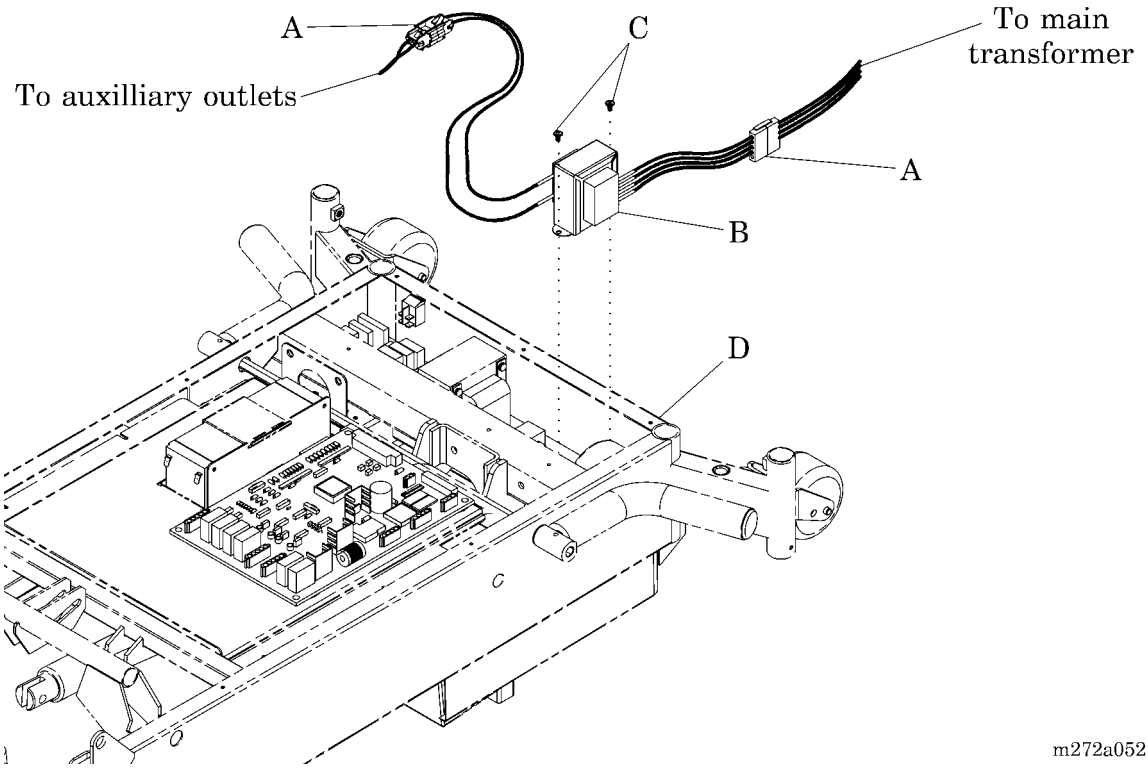
Figure 4-32. Auxiliary Transformer Assembly



Replacement

1. To install the replacement auxiliary transformer assembly (B), reverse the removal procedures.

2. Ensure that the wiring connectors (A) are firmly connected to the auxiliary transformer assembly (B).

3. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

4.26 Auxiliary Outlet Assembly

Tools required: Small wire cutters, Needle nose pliers, Phillips head screwdriver

SHOCK HAZARD:
The voltage in the electrical system presents an electrical shock hazard. Perform standard electrical service procedures before attempting service within the P.C. board enclosure. Adhere to all electrical safety precautions when servicing the bed's electrical system. Failure to do so could result in personal injury or equipment damage.

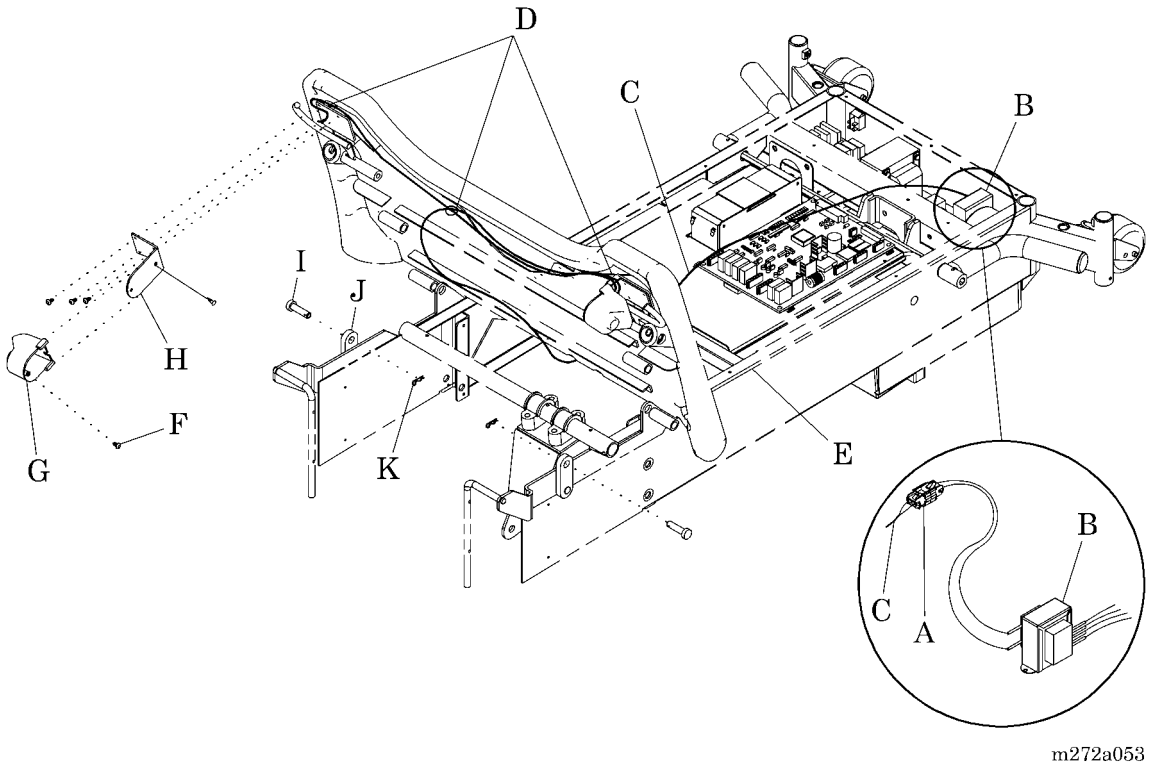
Removal

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the head function, raise the head section to the high position.
4. Using the hilow function, raise the bed to the high position.
5. Using the foot function, lower the foot section to the low position.
6. Remove the foot section from the bed. Refer to "Foot Section (Lift Off)" on page 4-42 or "Foot Section (Slide Off)" on page 4-44.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

7. Unplug the bed from its power source, and engage the lockout control.
8. Remove the top motor cover (refer to procedure 4.1).
9. Identify and disconnect the wiring connector (A) from the auxiliary transformer assembly (B) to the auxiliary outlet cable assembly (C) (see figure 4-33 on page 4-68).
10. Using the needle nose pliers, remove the hairpin cotters (K) from the clevis pins (I) connecting the seat section to the seat pivot links (J).

Figure 4-33. Auxiliary Outlet Assembly



11. Remove the clevis pins (I) connecting the seat section to the seat pivot links (J).

12. Using the CPR handle, lower the head section about halfway.

13. Raise the seat section and allow it to rest against the head section.

14. Using the small wire cutters, cut and remove the cable ties (D) that secure the auxiliary outlet cable assembly (C) to the bed frame (E).

15. Using the phillips head screwdriver, remove the screw (F) that secures the auxiliary outlet box (G) to the auxiliary outlet box mount (H).

16. Slide the auxiliary outlet box (G) downward, and remove it from the auxiliary outlet box mount (H).

17. Note the routing and orientation of the auxiliary outlet cable assembly (C) to ensure that it is oriented and routed correctly during the replacement procedure.

18. Carefully maneuver the auxiliary outlet cable assembly (C) through the frame and under the seat section to remove the auxiliary outlet box (G) from the bed.

Replacement

1. To install the replacement auxiliary outlet assembly, reverse the removal procedures.

2. Ensure that the wiring connector (A) is firmly connected to the auxiliary transformer assembly (B).

3. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

4.27 Lockout Switch Assembly

Tools required: None

SHOCK HAZARD:
The voltage in the electrical system presents an electrical shock hazard. Perform standard electrical service procedures before attempting service within the P.C. board enclosure. Adhere to all electrical safety precautions when servicing the bed's electrical system. Failure to do so could result in personal injury or equipment damage.

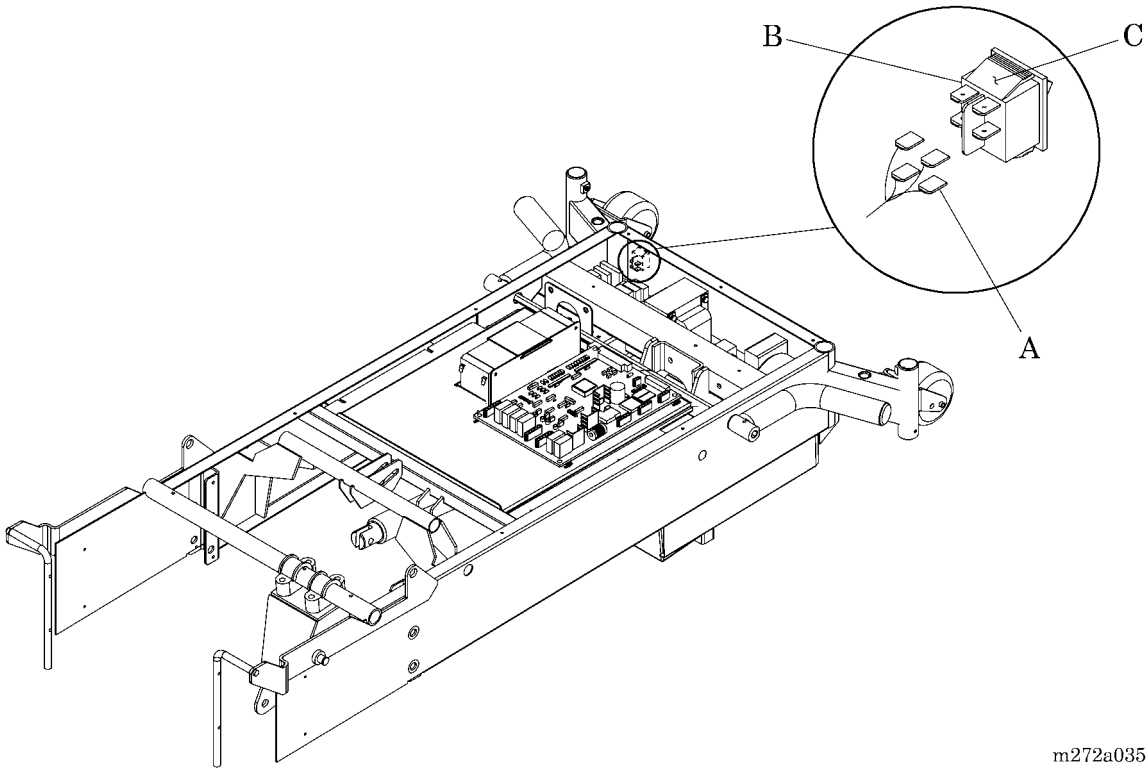
Removal

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the head function, raise the head section to the high position.
4. Using the hilow function, raise the bed to the high position.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

5. Unplug the bed from its power source, and engage the lockout control.
6. Remove the top motor cover (refer to procedure 4.1).
7. Identify and disconnect the wiring connector (A) from the lockout switch assembly (B) (see figure 4-34 on page 4-71).
8. Compress the tabs (C) on the lockout switch assembly (B).
9. Maneuver and remove the lockout switch assembly (B) from the bed.

Figure 4-34. Lockout Switch Assembly



Replacement

1. To install the replacement lockout switch assembly (B), reverse the removal procedures.

2. Ensure that the wiring connector (A) is firmly connected to the lockout switch assembly (B).

3. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

4.28 Siderail Assembly

Tools required: Small screwdriver, Needle nose pliers, Ratchet, 7/16" socket

WARNING:
Adhere to all electrical safety precautions when servicing the bed's electrical system. Failure to do so could result in personal injury or equipment damage.

Removal

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the head function, raise the head section to the high position.

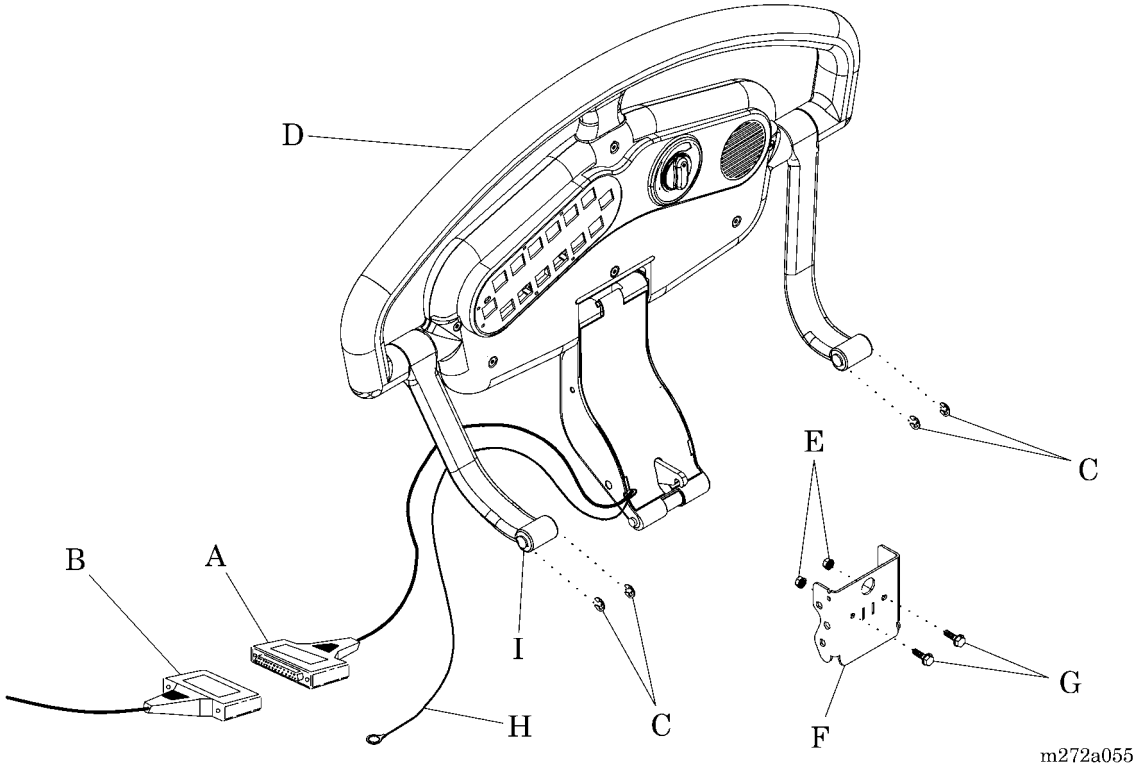
SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

4. Unplug the bed from its power source.
5. Disconnect the siderail cable (A) from the cable (B) to the logic control P.C. board (see figure 4-35 on page 4-73).
6. Disconnect the ground strap (H).

CAUTION:
Support the siderail during the removal procedure. Failure to do so could result in equipment damage.

7. Using the needle nose pliers or a small screwdriver, remove the four e-rings (C) that secure the siderail assembly (D) to the head section.
8. Using a ratchet and 7/16" socket, remove the two nuts (E) and bolts (G) that secure the siderail mounting bracket (F) to the head section.

Figure 4-35. Siderail Assembly



CAUTION:
Ensure that the siderail does not drop when the pins are removed. Failure to do so could result in damage to the wiring going to the siderail.

9. Remove the pins (I) from the siderail assembly (D).

10. Set the siderail in a place where it will not be damaged.

Replacement

1. To install the replacement siderail assembly (D), reverse the removal procedure.

2. To ensure proper operation of the Affinity® Three Birthing Bed, perform the "Function Checks" on page 2-6.

4.29 Patient Siderail (Inboard) P.C. Switch Board

Tools required: T25 Torx®[1] head bit Ratchet
T10 Torx® head bit

WARNING:
Adhere to all electrical safety precautions when servicing the bed's electrical system. Failure to do so could result in personal injury or equipment damage.

Removal

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the head function, raise the head section to the high position.
4. Using the hilow function, raise the bed to the high position.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

5. Unplug the bed from its power source, and engage the lockout control.
6. Using the ratchet and T25 Torx® head bit, remove the eight plastic screws (A) that secure the patient siderail cover (B) to the siderail assembly (C) (see figure 4-36 on page 4-75).
7. Carefully remove the patient siderail cover (B) from the siderail assembly (C).
8. Note the orientation of the wires and cable assemblies to ensure proper installation during the replacement procedure.

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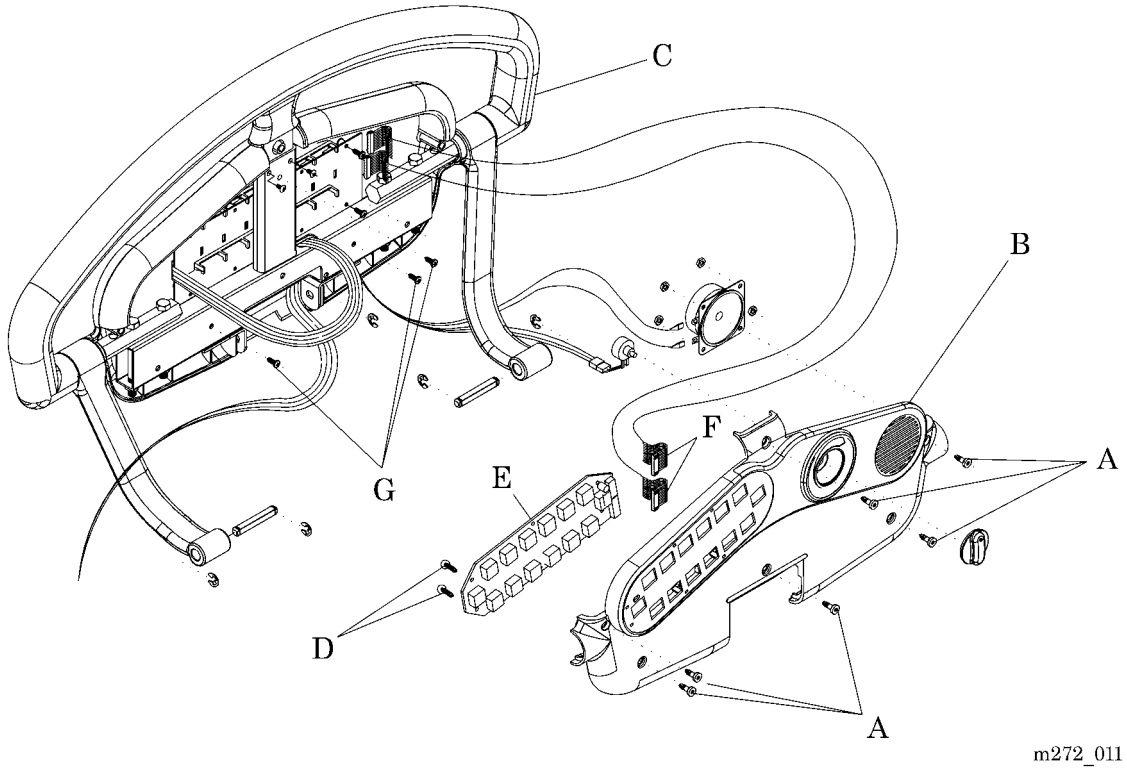
Figure 4-36. Patient Siderail (Inboard) P.C. Switch Board



9. Using the ratchet and T10 Torx®[1] head bit, remove the four screws (D) that secure the P.C. switch board (E) to the patient siderail cover (B).

10. Slide the P.C. switch board (E) off the patient siderail cover (B) tabs, and remove it from the patient siderail cover (B).

11. Disconnect the two SideCom® Communication System cable assemblies (F) from the P.C. switch board (E).

Replacement

1. To install the replacement P.C. switch board (E), reverse the removal procedures.

2. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

1. Torx® is a registered trademark of Textron, Inc.

4.30 Caregiver Siderail (Outboard) P.C. Switch Board

Tools required: T25 Torx®[1] head bit Ratchet
T10 Torx® head bit

WARNING:
Adhere to all electrical safety precautions when servicing the bed's electrical system. Failure to do so could result in personal injury or equipment damage.

Removal

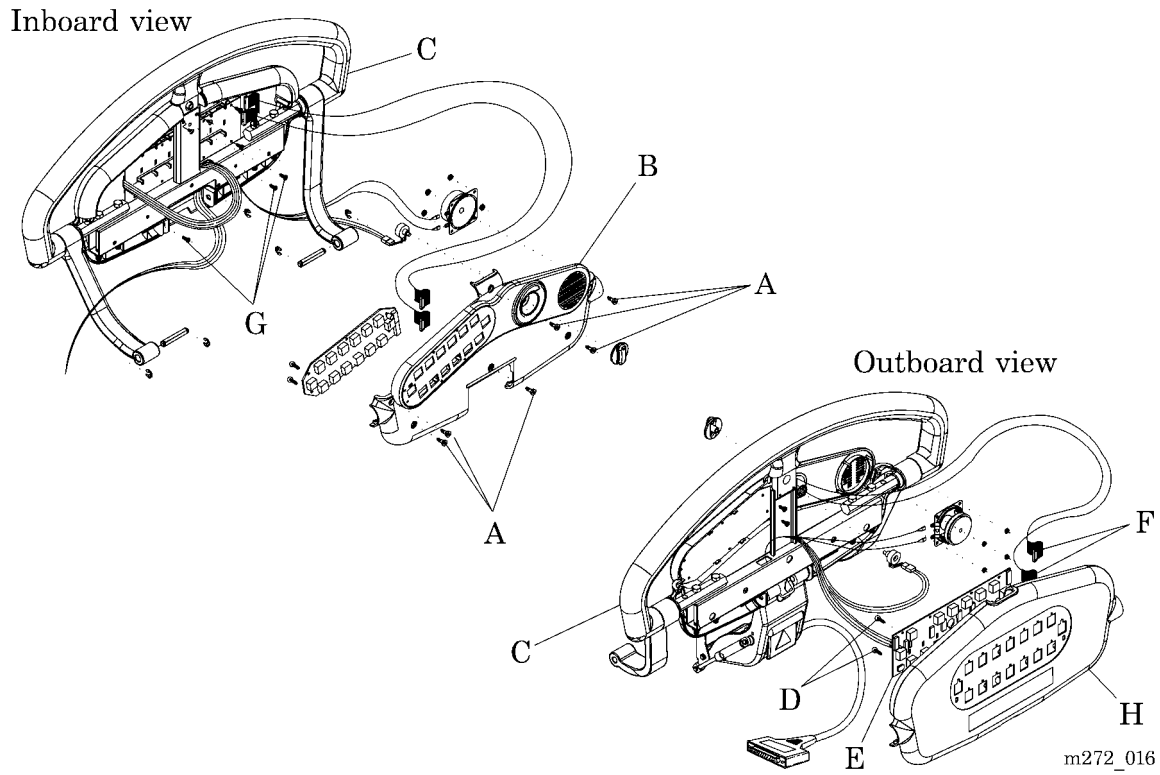
1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the head function, raise the head section to the high position.
4. Using the hilow function, raise the bed to the high position.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

5. Unplug the bed from its power source.
6. Using the ratchet and T25 Torx® head bit, remove the eight plastic screws (A) that secure the patient siderail cover (B) to the siderail assembly (C) (see figure 4-37 on page 4-77).
7. Carefully separate the patient siderail cover (B) from the siderail assembly (C).
8. Note the orientation of the wires and cable assemblies to ensure proper installation during the replacement procedure.
9. Using the ratchet and T25 Torx® head bit, remove the three screws (G) that secure the caregiver siderail cover (H) to the siderail assembly (C).
10. Carefully remove the caregiver siderail cover from the siderail assembly (C).

1. Torx® is a registered trademark of Textron, Inc.

Figure 4-37. Caregiver Siderail (Outboard) P.C. Switch Board



11. Note the orientation of the wires and cable assemblies to ensure proper installation during the replacement procedure.

12. Using the ratchet and T10 Torx®[1] head bit, remove the four screws (D) that secure the P.C. switch board (E) to the caregiver siderail cover (H).

13. Slide the P.C. switch board (E) off the caregiver siderail cover (H) tabs, and remove it from the caregiver siderail cover (H).

14. Disconnect the two SideCom® Communication System cable assemblies (F) from the P.C. switch board (E).

Replacement

1. To install the replacement P.C. switch board (E), reverse the removal procedures.

2. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

1. Torx® is a registered trademark of Textron, Inc.

4.31 Central Braking System

Tools required:	Phillips head screwdriver	1/8" drift punch
	7/16" wrench	Blue Loctite®[1] #242
	Hammer	½" wrench
	E-ring removal tool	Anti-seize compound
	Needle nose pliers	Marker pen
	(2) pieces of 2" x 4" x 36" lumber	
	Small screwdriver	
	Red Loctite® #262	

The brake/steer caster is located at the left-hand foot end of the base frame. The brake caster is located at the right-hand head end of the base frame. To service the central braking system mechanism, lay the bed on its side. This requires the siderail to be secured and the brake/steer pedal to be removed.

Removal

1. Determine on which side the bed is to be placed.

2. Secure the siderail by lowering it beneath the bed and tying it in this position, or removing it as an assembly from the bed (refer to procedure 4.28).

3. Place the brake/steer (foot) pedal (A) into the steer position (see figure 4-38 on page 4-79).

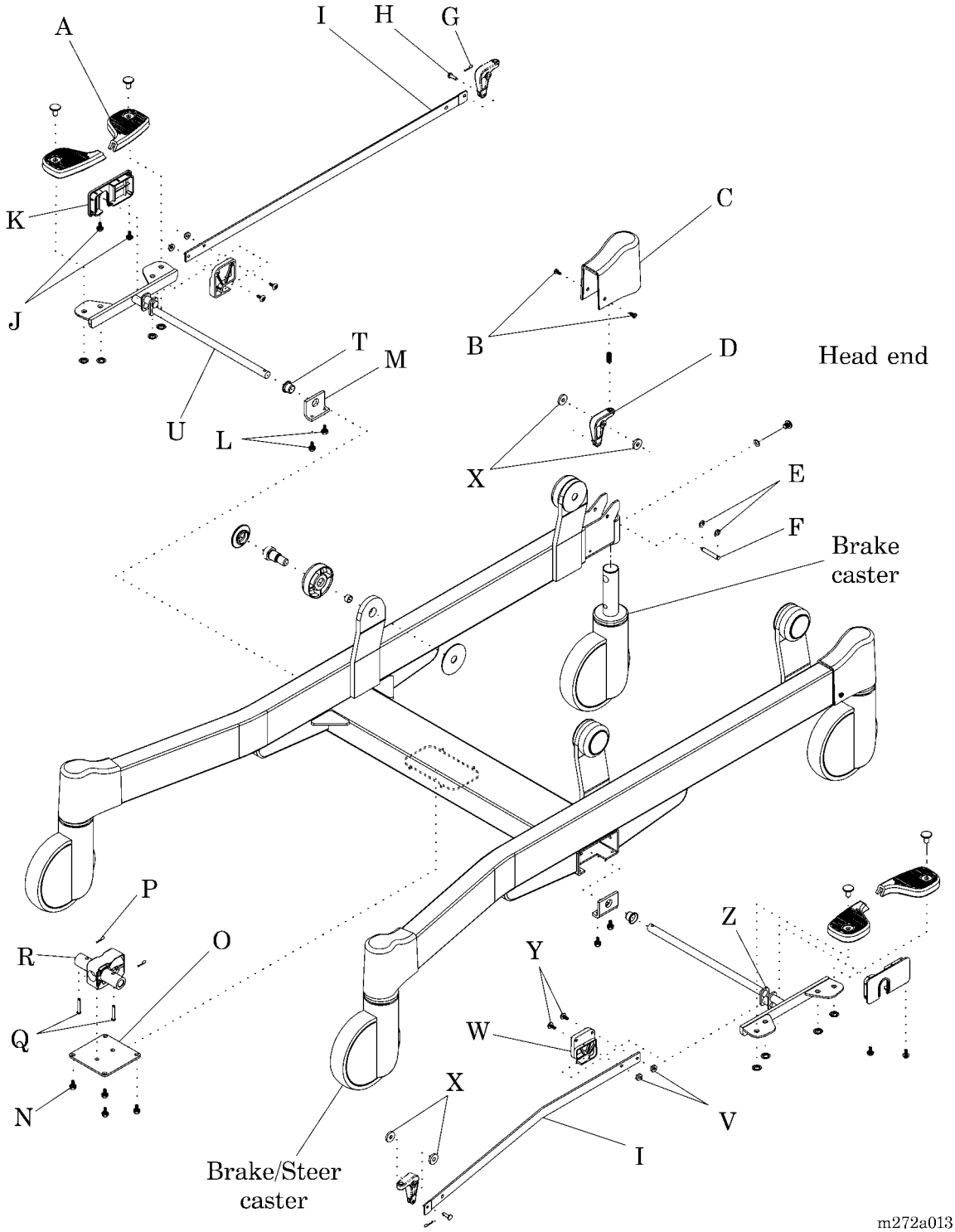
4. Using a phillips head screwdriver, remove the two screws (B) securing the leg covers (C) over the brake/steer and brake casters.

5. Remove the leg covers (C).

6. Remove the rocker arm (D) located above either the brake/steer caster or the brake caster by performing the following steps:

1. Loctite® is a registered trademark of Loctite Corporation.

Figure 4-38. Central Braking System



a. Remove the e-ring (E) from one side of the groove pin (F) securing the rocker arm (D) above the caster.
b. Remove the groove pin (F) to free the rocker arm (D).
c. Remove the spacers (X) on each side of the rocker arm (D).
d. Remove the hairpin (G) and connector pin (H) that secures the metal brake strip (I) to the rocker arm (D).
e. Lift out and remove the rocker arm (D).

7. Repeat step 6 for the remaining rocker arm.
8. Place the brake/steer pedal (A) into the neutral position.
9. Remove the headboard and the foot section from the bed.
10. Place the pads on the floor to protect the bed from damage.
11. Carefully turn the bed onto the side that has the siderail assembly secured.
12. Using a phillips head screwdriver, remove the two screws (J) and the end caps (K) covering the cross tube (behind the brake/steer pedal) at both sides of the base frame.
13. Using a phillips head screwdriver, remove the two screws (L) from the brake rod support bracket (M) on each side of the base frame.
14. Using a phillips head screwdriver, remove the four screws (N) securing the detent housing plate (O) at the center of the cross channel.
15. Remove the two hairpins (P) and clevis pins (Q) that connect the shaft of both the brake/steer pedals to the detent mechanism assembly (R).
16. Rotate either brake/steer pedal (A) to maneuver the cam portion (Z) of its shaft (U) from the cam pivot (W).
17. Pull the brake/steer pedal shaft (U) free of the cross channel and detent mechanism assembly (R).
18. Repeat step 16 and step 17 for the opposite side.
19. Remove the detent mechanism assembly (R) from the cross channel.
20. Slide the brake rod support bracket (M) and bushing (T) from the end of the shaft (U).

21. Remove the brake strips (I) from the base frame.

22. Using a phillips head screwdriver, remove the two screws (Y) and locknuts (V) that fasten each brake strip (I) to its cam pivot (W).

Replacement

1. To install the replacement central braking system mechanism, reverse the removal procedure **with attention to the following**:
   a. Ensure that the brake/steer strip (straight metal strap) and the brake strip (bent metal strap) are correctly assembled on their respective sides.
   b. Ensure that each brake strip (I) is correctly attached to its cam pivot (W).
   c. Complete sections “Brake and Steer Caster Adjustment” on page 4-83 and “Brake Caster Adjustment” on page 4-84.

2. Ensure that all brake and steer functions work properly.

3. To ensure proper operation of the Affinity® Three Birthing Bed, perform the “Function Checks” on page 2-6.

4.32 Caster Assembly

Tools required:	T25 Torx®[1] head bit	5/32" Allen™[2] wrench
	Ratchet	3/16" Allen™ wrench
	Bed jack	Turpentine

The bed has two casters that have a braking feature. One of these casters also has a steer feature. The brake/steer caster is located at the left-hand foot end of the bed (as determined by lying in the bed on one's back). The brake (only) caster is located at the right-hand head end of the bed. These two casters may require adjustment after service, or because of normal wear. The other two casters are basic swivel casters which require no adjustments.

Placing the brake/steer pedal in steer locks the left-hand foot end caster into a position that is parallel to the bed (as described in chapter 1).

Removal

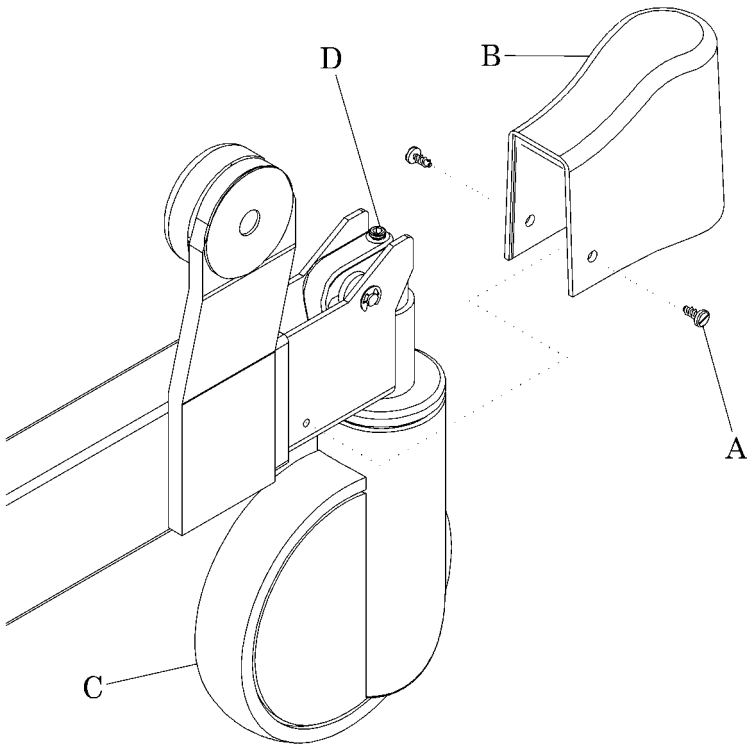
1. Set the brake/steer pedal to the brake position.
2. Using the ratchet and T25 Torx® head bit, remove the two screws (A) securing the leg cover (B) over the caster (C) (see figure 4-39 on page 4-83).
3. Remove the leg cover (B).
4. Using the 3/16" Allen ™ wrench, remove the caster mounting screw (E).
5. Place a jack under the base frame, and raise the base frame high enough to remove the caster (C).

WARNING:
Ensure that the bed is stable before removing the caster. Failure to do so could result in personal injury or equipment damage.

6. Remove the caster (C) from the bed.

1. Torx® is a registered trademark of Textron, Inc.
2. Allen™ is a trademark of Industrial Fasteners, Inc.

Figure 4-39. Caster Assembly



Replacement

1. To install the replacement caster (C), reverse the removal procedure.
2. Ensure that the caster (C) rolls and swivels freely, and that all brake and steer functions work properly.

Brake and Steer Caster Adjustment

1. Set the brake/steer pedal to place the system in neutral.
2. Perform step 1 through step 3 in “Removal” on page 4-82.
3. Using the 5/32" Allen™ wrench, turn the setscrew (D) clockwise while swiveling the caster (C) about 2" from side to side, until you hear a light ratcheting sound.
4. Turn the setscrew (D) counterclockwise until the ratcheting stops.
5. Set the brake/steer pedal to place the system in the brake position.

6. Ensure that the caster (C) tire does not roll.
7. If the caster (C) tire rolls, tighten the setscrew (D) slightly.
8. If, after performing step 7, the brake still seems to slip, check the caster (C) tire for wax buildup. Clean the tire with turpentine if necessary.
9. Set the brake/steer pedal to place the system in steer.
10. Swivel the brake/steer caster (C).
11. The caster (C) should lock into a position parallel with the length of the bed.
12. Set the brake/steer pedal in the neutral position.
13. Rotate the brake/steer caster (C) 180°. The caster should again lock into a position parallel with the length of the bed.
14. Set the brake/steer pedal to place the system in neutral.
15. Swivel the brake/steer caster (C) from side to side, while checking for signs of ratcheting.
16. If necessary, loosen the setscrew (D) to allow the caster (C) to swivel without ratcheting, but so that it can still be locked in the steer position.

Brake Caster Adjustment

1. Perform step 1 through step 8 in “Brake and Steer Caster Adjustment” on page 4-83.

Chapter 5
Parts List

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Warranty

HILL-ROM, INC.
LIMITED WARRANTY

Hill-Rom, Inc. (Hill-Rom) has a long tradition of providing superior products and service to our customer. Our goal is "Total Customer Satisfaction". In that spirit, Hill-Rom is proud to offer the following warranty.

GENERAL WARRANTY (APPLICABLE UNLESS A SPECIFIC WARRANTY IS LISTED)

Hill-Rom warrants to the original purchaser that its products and replacement parts shall be free from defects in material and workmanship for a period of one (1) year from date of delivery. Hill-Rom's obligation under this warranty is expressly limited to supplying replacement parts and/or service for, or replacing, at its option, any product which is, in the sole discretion of Hill-Rom, found to be defective. In addition to the foregoing one year warranty, Hill-Rom warrants to the original purchaser that the frame and welds on its products will be free from structural defects for the life of the product. Any product upgrade or modification initiated by Hill-Rom does not affect the original product warranty.

SPECIFIC WARRANTIES

MATTRESS WARRANTIES

Hill-Rom warrants to the original purchaser that its mattress product shall be free from defects in material and workmanship for a period of two (2) years from date of delivery. However, electro mechanical mattress components (compressors, valves, printed circuit boards, hoses, and couplers) are covered by the general one (1) year warranty.

EXPENDABLES WARRANTIES

A sixty (60) day limited warranty from date of delivery applies to expendable parts such as cushions, coverlets, software diskettes, locator badge batteries, dome light incandescent bulbs, overhead fluorescent tubes, heating elements, temperature probes, filter sheets, and microspheres. This warranty is limited to replacement of the parts covered.

TO OBTAIN PARTS AND SERVICE

In the United States, call Hill-Rom Technical Support Department at (800) 445-3720, Monday through Friday. In Canada, call Hill-Rom Technical Support Department at (800) 267-2337, Monday through Friday. Outside the United States and Canada, call your authorized Hill-Rom Distributor. In order to expedite service, we request you furnish the following information: customer identification number, product model number, serial number, and description of problem. A qualified specialist will provide, via telephone (United States and Canada), or FAX (Outside the United States and Canada), troubleshooting assistance for facility personnel and provide necessary parts to make repairs. If troubleshooting determines the need for on-site technical service, a qualified service representative will be dispatched. Replacement of non-technical items will be the responsibility of the customer. If requested by Hill-Rom, products or parts for which a warranty claim is made shall be returned prepaid to Hill-Rom's factory.

OUT OF WARRANTY EXCHANGE POLICY

After the expiration of the original warranty, upon request, Hill-Rom will ship as a replacement, components such as selected: motors and printed circuit boards, for like units returned to Hill-Rom by the original purchaser at a substantial savings. Please call Hill-Rom Technical Support Department for current pricing.

PARTS AVAILABILITY POLICY

Hill-Rom will offer parts for new and remanufactured products for ten (10) years from date of sale; for communications products for five (5) years from date of sale.

Note: Some original component parts and assemblies may not be available; functional equivalents may be substituted.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS WARRANTIES AND IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS OF PURPOSE. HILL-ROM'S OBLIGATION UNDER THESE WARRANTIES SHALL NOT INCLUDE ANY LIABILITY FOR LOSS OF PROFITS, DIRECT, INDIRECT OR CONSEQUENTIAL DAMAGES OR DELAYS. Some states, provinces, or countries do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply. Any improper or negligent use, any alterations or repairs not in accordance with Hill-Rom's manuals or performed by others in such manner as in Hill-Rom's sole judgment affects the product materially and adversely, shall void these warranties. These warranties do not cover failures due to misuse, abuse, neglect, or lack of routine maintenance. No employee or representative of Hill-Rom is authorized to change these warranties in any way or grant any other warranty unless in writing and signed by a Hill-Rom officer. These warranties provide specific legal rights; but, there may be other available rights, which vary from state to state, province to province, or country to country.

Revised October 20, 1998

Hill-Rom Company, Inc., 1069 State Route 46 E, Batesville, IN 47006-9167

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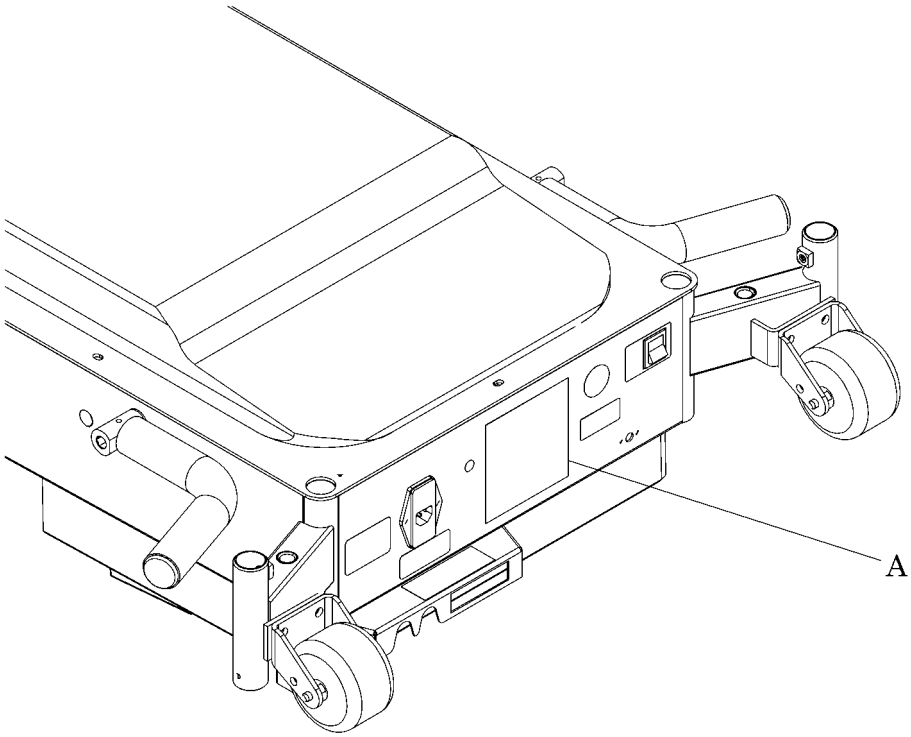
NOTES:

Service Parts Ordering

Using the parts lists in this manual, identify the part number(s) you require. Find the product number and serial number on the product identification label (A) (see figure 5-1 on page 5-5).

Figure 5-1. Product Identification Label Location



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Call Hill-Rom Technical Support at (800) 445-3720 with the following information:

- Six-digit customer account number
- Purchase order number
- Product number
- Serial number
- Part number(s)

To promptly order parts, request part prices and availability, or follow up on a service order, use the following Hill-Rom fax number:

(812) 934-8472

Terms:

- Net 30 days
- F.O.B. Batesville, IN
- Prepaid shipping charges added to invoice
- All orders shipped UPS ground unless specified

Address all inquiries to:

ATTN TECHNICAL SUPPORT—PARTS
HILL-ROM COMPANY, INC.
1069 STATE ROUTE 46 E
BATESVILLE IN 47006-9167

Address all return goods to:

ATTN SERVICE STORES
DISTRIBUTION CENTER DOOR D23
HILL-ROM COMPANY, INC.
COUNTY ROAD 300E
BATESVILLE IN 47006-9167

NOTE:
To eliminate possible delays or incorrect billings, **do not** return any items without a Return Material Authorization (RMA) number. When a return is requested, an RMA packet is included with each order. This packet includes an RMA number, instructions, and a shipping label. If an RMA number is not available, obtain one by phoning Hill-Rom Technical Support at (800) 445-3720.

Exchange Policy

The following are policies for in-warranty and out-of-warranty exchanges from Hill-Rom.

In-Warranty Exchanges

In some cases, Hill-Rom will request that parts/products be returned for inspection. When this occurs, you are expected to return parts/products within 30 days of receipt of the exchange part. If you fail to return the inoperative parts/products within the 30 day period, Hill-Rom will invoice your facility for the full selling price of the parts/products.

NOTE:
The preceding billing procedure pertains **only** to parts/products that Hill-Rom requests to be returned.

In some cases, the invoice accompanying the parts will show the full selling price (only for internal use at Hill-Rom). Do not confuse this price with your price.

Do not return any parts without an RMA number. When parts/products have been requested to be returned, Hill-Rom will include an RMA packet with the parts/products shipment. If an RMA number is not available, obtain one by phoning Hill-Rom Technical Support at (800) 445-3720.

Out-of-Warranty Exchanges

You are expected to return the inoperative parts/products within 30 days of receipt of the exchange part. Hill-Rom will include an RMA packet with the parts/products shipment. If an RMA number is not available, obtain one by phoning Hill-Rom Technical Support at (800) 445-3720. Hill-Rom will invoice your facility for the full selling price of the parts/products. Upon return of the inoperative parts/products, Hill-Rom will issue a credit to your facility for **the difference between the exchange price and the full selling price of the parts/products**.

Recommended Spare Parts

For a recommended spare parts list to service five or more units, see table 5-1 on page 5-8.

Table 5-1. Recommended Spare Parts

Part Number	Quantity	Description
450846048 (3700)	2	Caster, 6" swivel
450848048 (3700)	2	Caster, 8" swivel
45084-6648 (3700)	1	Caster, 6" brake
450848648 (3700)	1	Caster, 8" brake
450846448 (3700)	1	Caster, 6" brake/steer
450848448 (3700)	1	Caster, 8" brake/steer
63920 (3700)	2	Hilow/Foot drive
63927 (3700)	1	Head drive
4314317 (3700)	5	Fuse, timelag, 4A, 125V AC, 5 mm x 20 mm
4360519 (3700)	5	Fuse, timelag, 2A, 250V AC, 5 mm x 20 mm
65345 (3700)	1	PCB assembly, control
67208 (3700)	1	Interface board assembly
63945 (3700)	1	Cable assembly, battery
6394201 (3700)	1	Cable assembly, battery-to-battery
6642910S (3700)	5	Fuse, 10A, 32V DC, automotive style

NOTES:

Caster Module

Figure 5-2. Caster Module

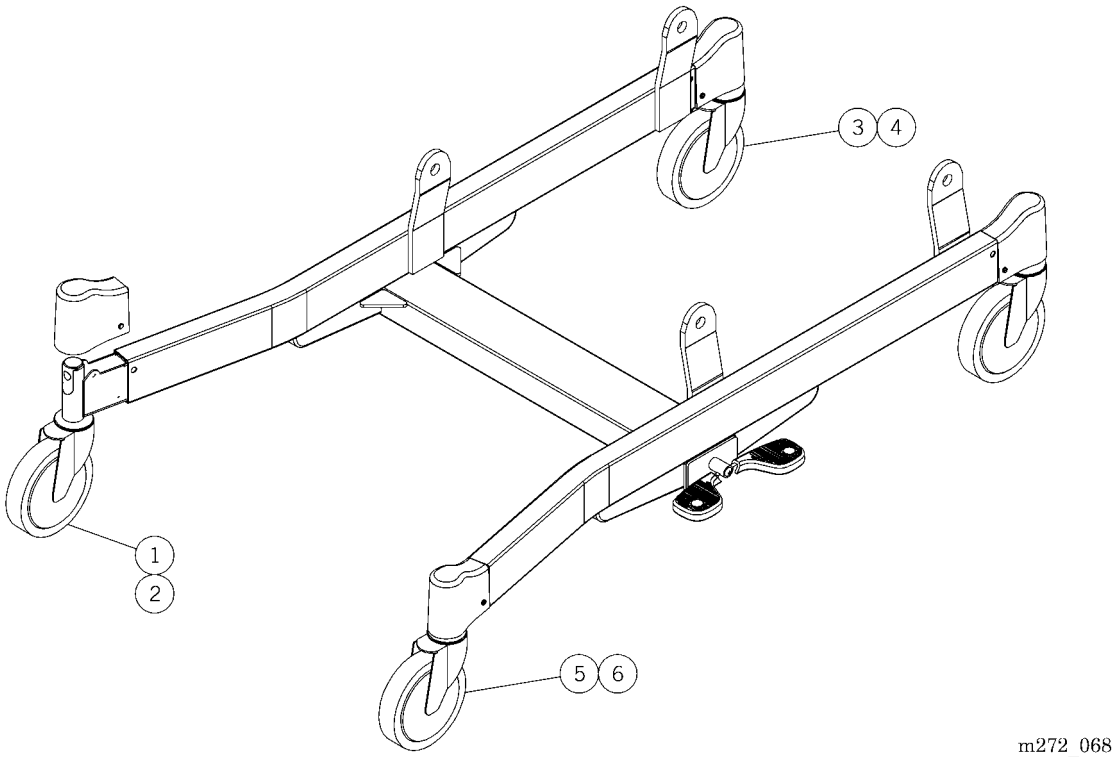

Table 5-2. Caster Module

Item Number	Part Number	Quantity	Description
1	450846048 (3700)	2	Caster, 6" swivel
2	450848048 (3700)	2	Caster, 8" swivel
3	45084-6648 (3700)	1	Caster, 6" brake
4	450848648 (3700)	1	Caster, 8" brake
5	450846448 (3700)	1	Caster, 6" brake/steer
6	450848448 (3700)	1	Caster, 8" brake/steer

NOTES:

Base Module—P/N63951S (Sheet 1 of 2)

Figure 5-3. Base Module—P/N 63951S (Sheet 1 of 2)

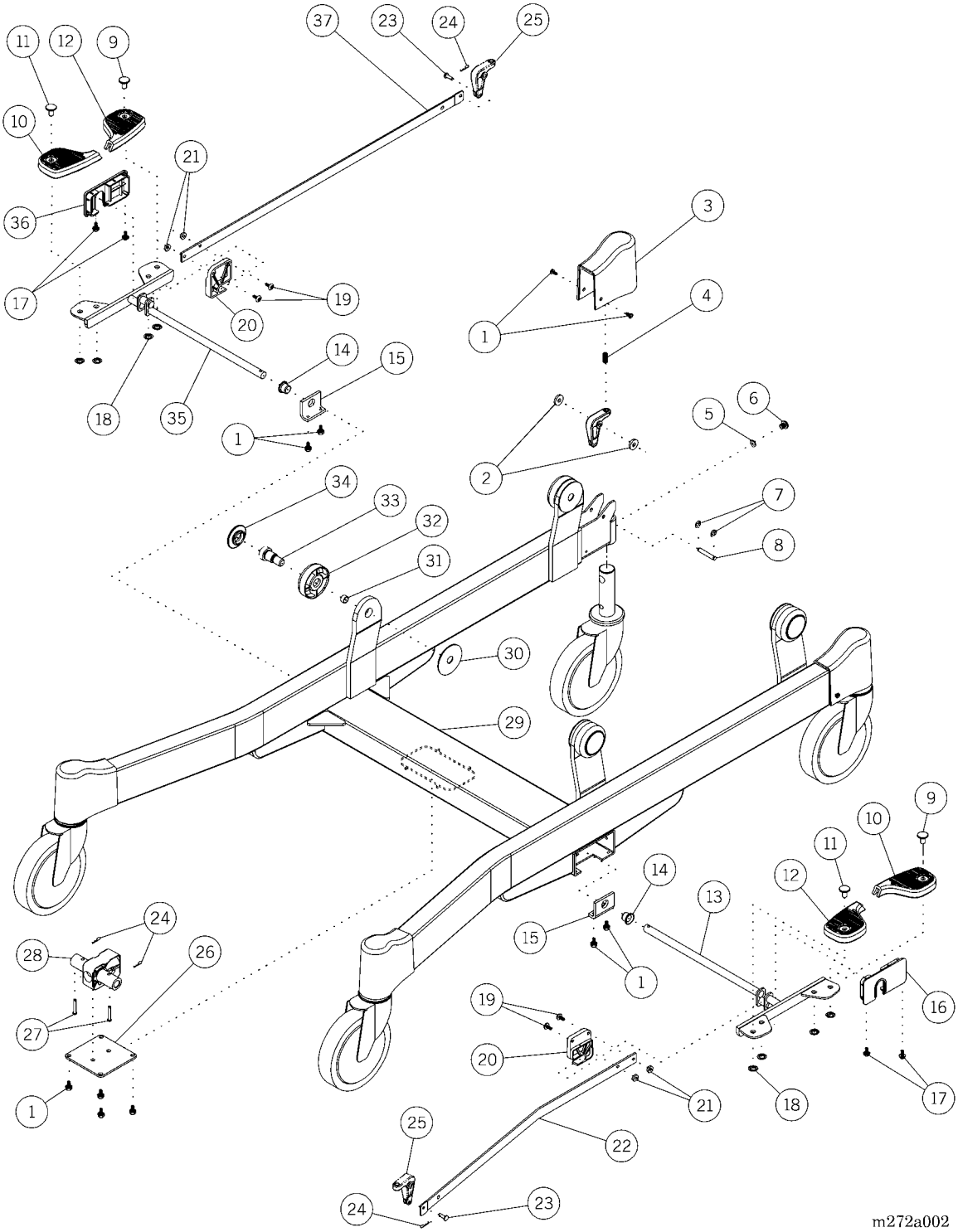

Table 5-3. Base Module—P/N 63951S (Sheet 1 of 2)

Item Number	Part Number	Quantity	Description
1	43878 (3700)	16	Screw, button hd Torx®[a]
2	41002 (3700)	4	Spacer, rocker arm,
3	41269 (3700)	4	Leg cover
4	32425 (3700)	2	Set screw, hex socket hd
5	43030 (3700)	4	Spring washer, caster
6	32572 (3700)	4	Screw
7	18890 (3700)	4	Truarc ring
8	41001PL (3700)	2	Groove pin, rocker arm
9	4258358 (3700)	2	Brake/steer disc—green
10	41237 (3700)	2	Pad, right
11	4258360 (3700)	2	Brake/steer disc—orange
12	41238 (3700)	2	Pad, left
13	43940 (3700)	1	Brake pedal assembly, lh
14	9034002 (3700)	2	Bearing, DU flanged
15	44017PL (3700)	2	Bracket, brake rod support
16	439460148 (3700)	1	End cap, cross tube, lh
17	46260 (3700)	4	Screw, button hd Torx®
18	32909 (3700)	8	Locknut
19	90055-10 (3700)	4	Screw, pan hd truss
20	43953 (3700)	2	Cam pivot
21	755 (3700)	4	Locknut
22	43955PL (3700)	1	Brake strip
23	757 (3700)	2	Pin, connector
24	44352 (3700)	4	Hairpin
25	34715 (3700)	2	Rocker arm assembly
26	43957 (3700)	1	Plate, detent housing
27	44350 (3700)	2	Clevis pin
28	44023 (3700)	1	Detent mechanism assembly
29	6722548 (3700)	2	Base frame weldment

a. Torx® is a registered trademark of Textron, Inc.

Item Number	Part Number	Quantity	Description
30	4098301 (3700)	4	Washer, celcon
31	9026312 (3700)	2	Bearing, DU
32	470850148 (3700)	4	Base boss
33	9047714 (3700)	4	Screw, shoulder, hex socket hd
34	4130848 (3700)	4	End cap
35	44433 (3700)	1	Brake pedal assembly, rh
36	4394602 (3700)	1	End cap, cross tube, rh
37	43956PL (3700)	1	Brake/steer strip
38◆	6988301S (3700)	1	Base module, complete assembly, domestic
39◆	6988302S (3700)	1	Base module, complete assembly, international

NOTE:

- ◆ Items 38 and 39 not shown in figure 5-3 on page 5-12.

NOTES:

Base Module—P/N63951S (Sheet 2 of 2)

Figure 5-4. Base Module—P/N 63951S (Sheet 2 of 2)

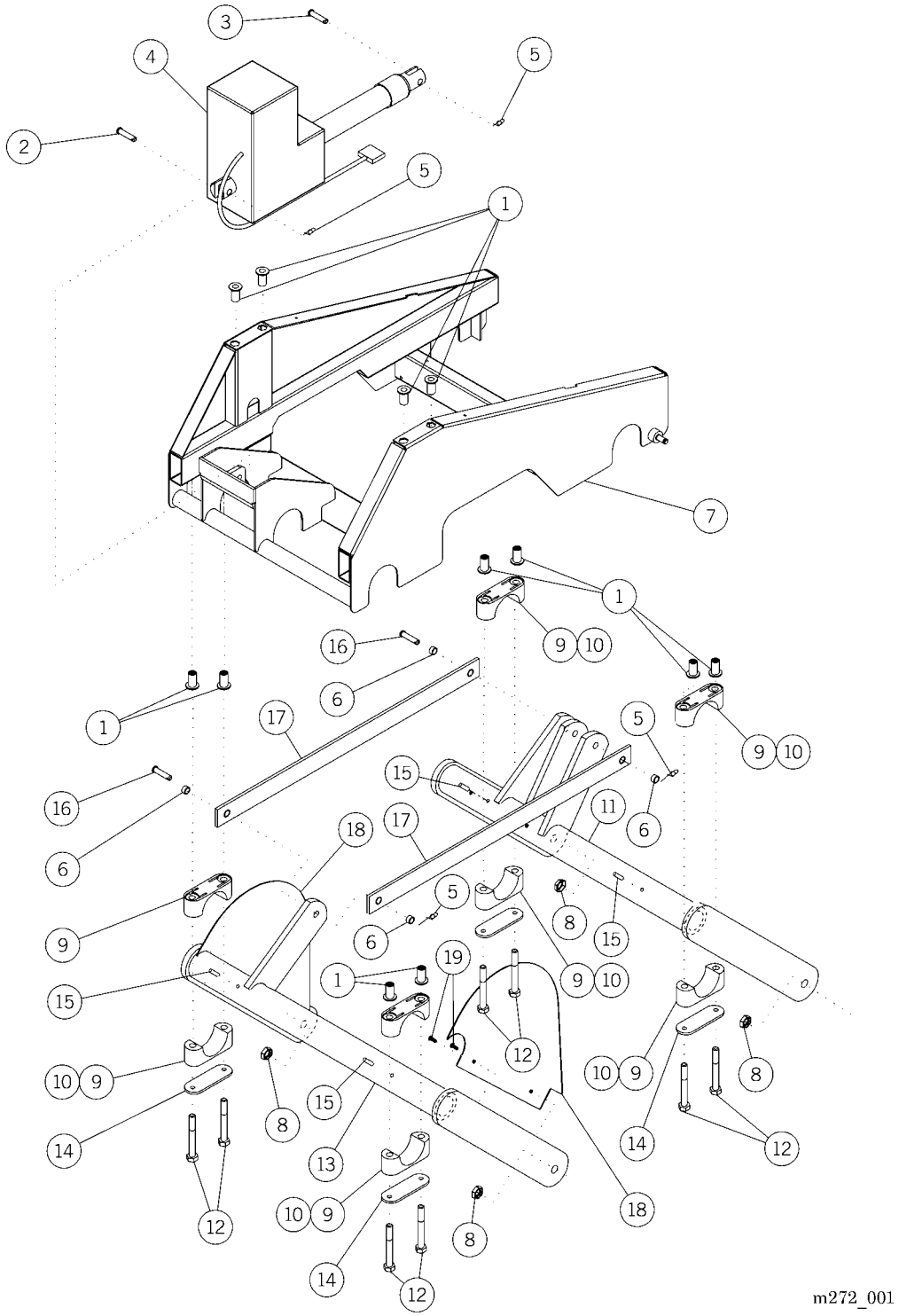

Table 5-4. Base Module—P/N 63951S (Sheet 2 of 2)

Item Number	Part Number	Quantity	Description
1	60133 (3700)	12	Hex rivnut
2	61653PL (3700)	1	Clevis pin
3	6314308PL (3700)	1	Clevis pin
4	63920 (3700)	1	Hilow/Foot drive
5	61615 (3700)	4	Rue ring cotter
6	9026304 (3700)	4	Bearing, DU
7	6392648 (3700)	1	Intermediate frame weldment
8	66039 (3700)	4	Nut, jam
9	41022 (3700)	8	Pivot block
10	43772 (3700)	As required	Lithium base grease
11	6722348 (3700)	1	Lift arm crank weldment
12	62228 (3700)	8	Screw, hex hd
13	6722448 (3700)	1	Lift arm follower weldment
14	41024 (3700)	4	Pivot block plate
15	27509 (3700)	4	Roll pin
16	6314304PL (3700)	2	Clevis pin
17	6396248 (3700)	1	Link, hilow lift arms
18	65987 (3700)	2	Guard, lift arm
19	393 (3700)	4	Screw, pan hd

Main Frame Module

Figure 5-5. Main Frame Module

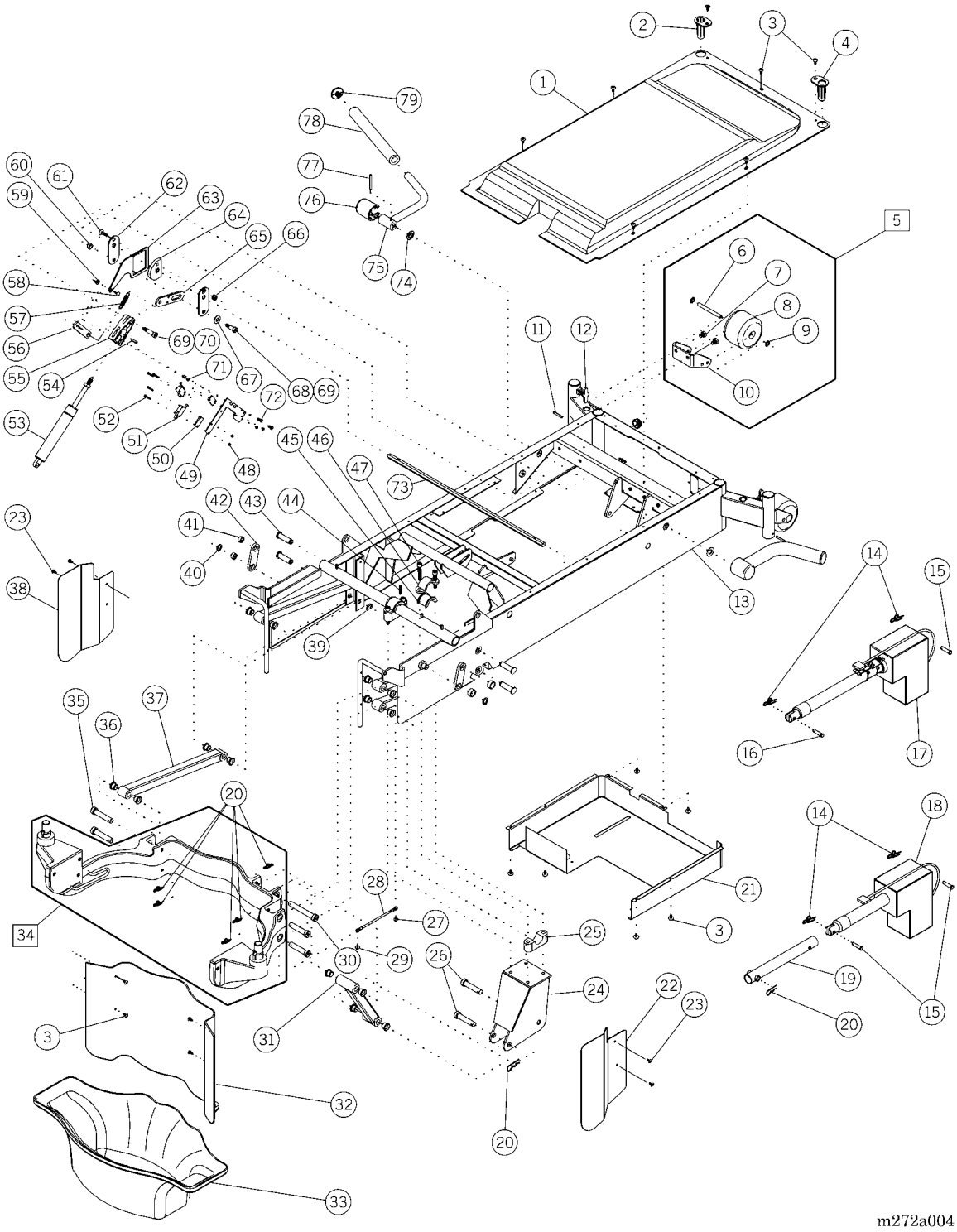

Table 5-5. Main Frame Module

Item Number	Part Number	Quantity	Description
1	6391648 (3700)	1	Cover, top motor
2	41250 (3700)	1	Headboard bushing, oval
3	43878 (3700)	17	Screw, button hd Torx®[a]
4	41078 (3700)	1	Headboard bushing, round
5	41243S48 (3700)	1	Roller bumper and bracket assembly
6	25208 (3700)	2	Axle
7	90016-06 (3700)	4	Cap screw, hex hd
8	3455748 (3700)	2	Roller bumper
9	25210 (3700)	4	Pushnut
10	41243 (3700)	2	Bracket, roller bumper
11	3517 (3700)	2	Roll pin
12	38135 (3700)	2	Knob assembly
13	6391948 (3700)	1	Mainframe weldment
14	61615 (3700)	4	Rue ring cotter, 3/8"
15	61653PL (3700)	3	Clevis pin
16	6314306PL (3700)	1	Clevis pin
17	63927 (3700)	1	Head drive
18	63920 (3700)	1	Hilow/Foot drive
19	6591548 (3700)	1	Foot drive extension tube weldment
20	6161501 (3700)	7	Rue ring cotter
21	6398848 (3700)	1	Bottom cover weldment
22	41273 (3700)	1	Seat side shroud, lh
23	393H (3700)	4	Screw, pan hd
24	6393348 (3700)	1	Foot section pivot weldment
25	41023 (3700)	4	Pivot block, trend
26	48868 (3700)	2	Clevis pin
27	18921 (3700)	1	Screw, pan hd truss
28	37879 (3700)	1	Ground strap assembly
29	13206 (3700)	1	Screw, pan hd truss

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Item Number	Part Number	Quantity	Description
30	4886801 (3700) **or** 90260-48 (3700)	1	Clevis pin (used starting Jan. 2001) **or** Shoulder screw, hex socket hd, (used prior to Jan. 2001)
31	41263 (3700)	1	Foot section link bar weldment
32	41413 (3700)	1	Shroud, front
33	46772-48 (3700)	1	Placenta basin
34	41111S (3700)	1	Yoke casting assembly
35	48868 (3700) **or** 90260-28 (3700)	4	Clevis pin (used starting Jan. 2001) **or** Shoulder screw, hex socket hd, (used prior to Jan. 2001)
36	9026301 (3700)	20	Bushing, DU
37	4887448 (3700)	3	Foot section lift arm
38	41272 (3700)	1	Seat side shroud, rh
39	19678 (3700)	4	Truarc ring
40	36826 (3700)	2	Ring, retaining
41	9026307 (3700)	4	Bearing, DU self-lube
42	43039 (3700)	2	Link, seat pivot
43	41089PL (3700)	4	Pin, foot section
44	27509 (3700)	4	Roll pin
45	41036 (3700)	4	Bushing, foot section pivot
46	41037PL (3700)	4	Plate, foot section bushing
47	9016128 (3700)	8	Cap screw, hex socket hd
48	20605 (3700)	4	Locknut
49	41253 (3700)	1	Bracket, Trendelenburg limit switch
50	34401 (3700)	2	Spacer
51	19512 (3700)	2	Switch, snap, spdt
52	31642 (3700)	4	Screw
53	41450 (3700)	2	Trendelenburg gas spring
54	9685 (3700)	2	Roll pin
55	41252 (3700)	2	Trendelenburg gas head

Item Number	Part Number	Quantity	Description
56	41091 (3700)	2	Trendelenburg release lever
57	43056 (3700)	2	Spring, extension
58	43049 (3700)	2	Screw, shoulder, pan hd cross
59	40497 (3700)	2	Nut, keps
60	831 (3700)	2	Locknut
61	9006116 (3700)	2	Screw
62	41073PL (3700)	4	Trendelenburg activator
63	41087PL (3700)	2	Trendelenburg follower
64	41135PL (3700)	2	Trendelenburg cam
65	41079PL (3700)	2	Trendelenburg stop
66	20802 (3700)	2	Nut, keps
67	4540 (3700)	2	Washer
68	9025910 (3700)	2	Shoulder screw, hex socket hd, 5/16-18 x 5/8"
69	SA4840 (3700)	As required	Red Loctite®[a] #271
70	9025916 (3700)	2	Screw, shoulder, hex socket hd
71	43041 (3700)	2	Trendelenburg limit spacer
72	15463 (3700)	2	Bolt
73	40915PL (3700)	1	Trendelenburg handle hex bar
74	4630 (3700)	2	Oilite®[b] bushing
75	4089648 (3700)	2	Trendelenburg handle assembly
76	41153 (3700)	2	Cover, Trendelenburg handle
77	42539 (3700)	2	Spiral pin, 3/16" x 1¼"
78	4257363 (3700)	2	Trendelenburg handle foam
79	4116363 (3700)	2	Trendelenburg handle plug

a. Loctite® is a registered trademark of Loctite Corporation.
b. Oilite® is a registered trademark of Beemer Precision, Incorporated.

Siderail Module

Figure 5-6. Siderail Module

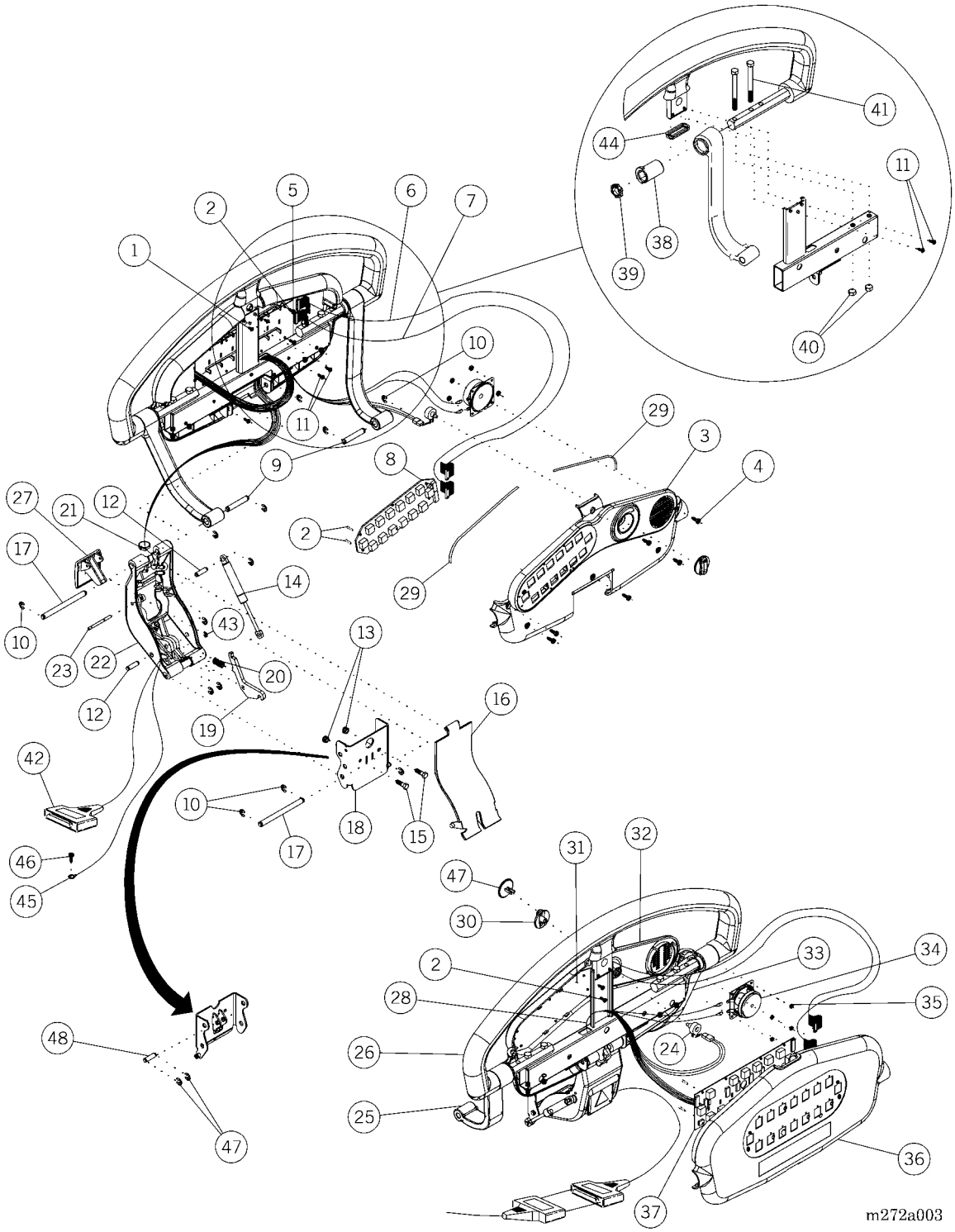

Table 5-6. Siderail Module*)*

Item Number	Part Number	Quantity	Description
1	62625 (3700)	4	Screw, pan hd, self-locking
2	4214101 (3700)	24	Screw, pan hd Torx®[a] hi-lo
3	6397902 (3700)	1	Siderail cover, patient, rh
4	472730448 (3700)	16	Screw, nylon
5	6503802 (3700)	1	P.C. board assembly, caregiver siderail control, rh
6	6401301 (3700)	2	Cable assembly, siderail jumper, 11
7	6401302 (3700)	2	Cable assembly, siderail jumper, 12
8	6528602 (3700)	1	P.C. board assembly, patient siderail control, rh
9	4727110PL (3700)	4	D-pin
10	35325 (3700)	18	E-ring
11	42142 (3700)	6	Screw, pan hd Torx® hi-lo
12	49192PL (3700)	4	Pin, latch pivot
13	20802 (3700)	4	Nut, keps
14	47323 (3700)	2	Dampener
15	44408 (3700)	4	Screw, hex washer hd
16	63250 (3700)	2	Cover, center arm
17	4727102PL (3700)	4	D-pin
18	6887248 (3700)	2	Siderail mounting bracket weldment (Replaces 4725948 siderail mounting bracket weldment. When replacing a 4725948 weldment with a 6887248 weldment, also replace 49192PL latch pivot pin with 68861PL latch pivot D-pin, and two 35325 E-rings with two 18890 E-rings)
19	47257PL (3700)	2	Latch, siderail
20	49111 (3700)	2	Spring, latch bias
21	19124 (3700)	2	Cable tie
22	62753 (3700)	2	Center arm, siderail

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Item Number	Part Number	Quantity	Description
23	47144PL (3700)	2	Shaft, pivot, siderail release lever
24	3005804 (3700)	2	Cable assembly, audio taper
25	6397501 (3700)	2	Siderail arm, lh
26	63977 (3700)	2	Upper rail
27	47256 (3700)	2	Lever, siderail release
28	6397648 (3700)	2	Siderail center weldment
29	67060 (3700)	2	Seal, siderail
30	4096301 (3700)	2	Knob, volume
31	6528601 (3700)	1	P.C. board assembly, patient siderail control, lh
32	6397901 (3700)	1	Siderail cover, patient, lh
33	6397502 (3700)	2	Siderail arm, rh
34	38873 (3700)	2	Speaker
35	28562 (3700)	8	Palnut
36	63980 (3700)	2	Siderail cover, caregiver
37	6503801 (3700)	1	P.C. board assembly, caregiver siderail control, lh
38	63969 (3700)	4	Bushing
39	66861 (3700)	4	Hex gasket, top cane
40	60619 (3700)	8	Nut, nylock
41	9001656 (3700)	8	Cap screw, hex hd
42	64011 (3700)	2	Cable assembly, siderail
43	49193 (3700)	2	E-ring
44	66860 (3700)	2	Gasket, top cane
45	4565832 (3700)	2	Ground strap
46	43878 (3700)	2	Screw, button hd Torx®[a]
47	68537 (3700)	2	Plug, volume control

a. Torx® is a registered trademark of Textron, Inc.

Item Number	Part Number	Quantity	Description
47	18890 (3700) **or** 35325 (3700)	4	E-ring (Used only with 6887248 siderail mounting bracket weldment and 68861PL latch pivot D-pin.) **or** E-ring (Used only with 4725948 siderail mounting bracket weldment and 49192PL latch pivot pin.)
48	68861PL (3700) **or** 49192PL (3700)	2	D-pin, latch pivot (Used only with 6887248 siderail mounting bracket weldment and 18890 E-rings.) **or** Pin, latch pivot (Used only with 4725948 siderail mounting bracket weldment and 35325 E-rings.)

Electronics Module (Sheet 1 of 3)

Figure 5-7. Electronics Module (Sheet 1 of 3)

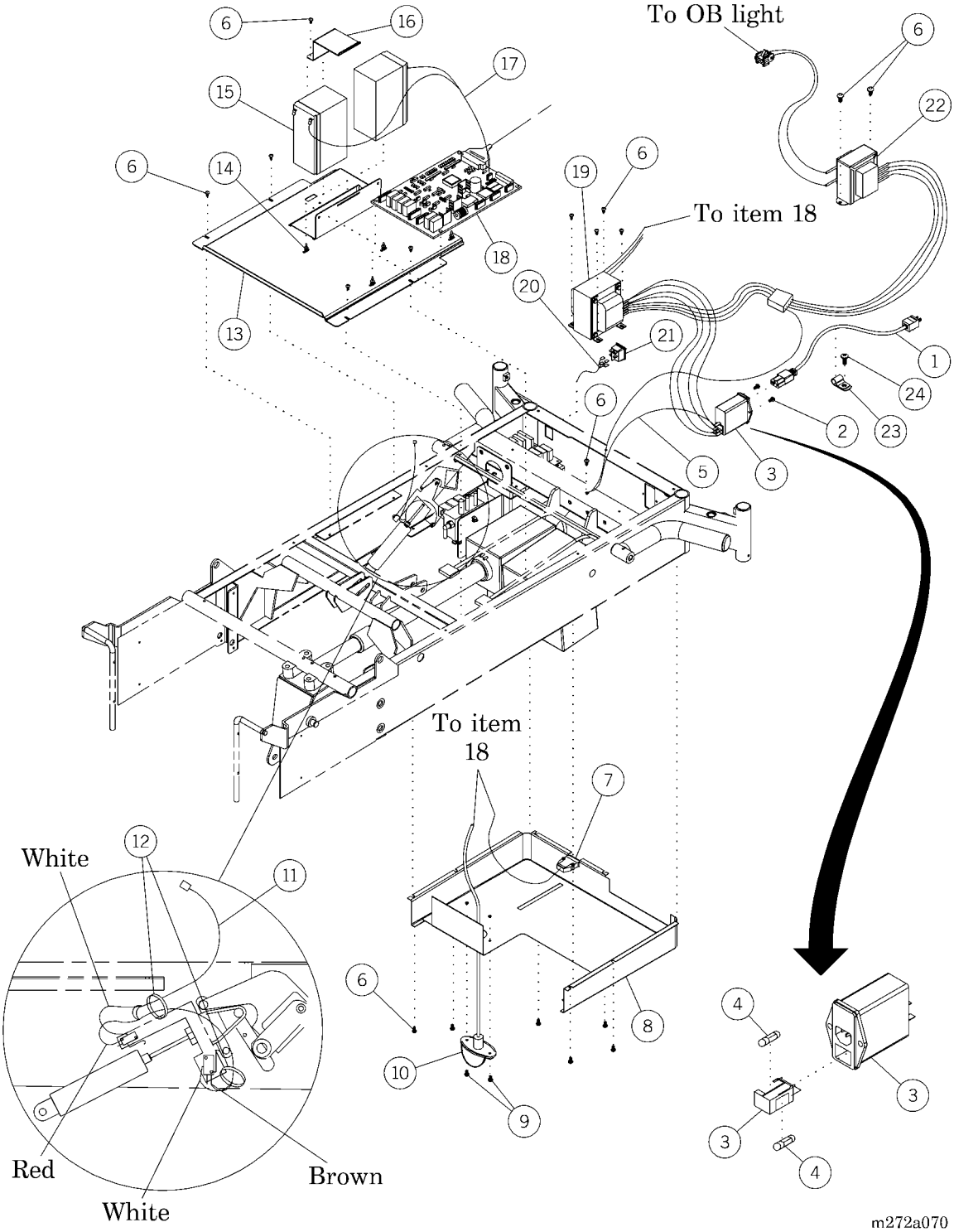

Table 5-7. Electronics Module (Sheet 1 of 3)

Item Number	Part Number	Quantity	Description
1	6342201 (3700) **or** 6342202 (3700) **or** 6342203 (3700) **or** 6342204 (3700) **or** 6342205 (3700) **or** 6342206 (3700)	1	Power cord, detachable 110V **or** Power cord, detachable 220V, Australia/New Zealand **or** Power cord, Continental Europe **or** Power cord, UK/Ireland **or** Power cord, Switzerland **or** Power cord, Denmark
2	46015 (3700)	2	Screw, bottom rail end cap
3	64002 (3700)	1	Power entry module
4	4314317 (3700) **or** 4360519 (3700)	2	Fuse, timelag, 4A, 125V AC **or** Fuse, timelag, 2A, 250V AC
5	66230 (3700)	1	Cable assembly, ground
6	43878 (3700)	18	Screw, button hd Torx®[a]
7	4142501S (3700)	1	Cable assembly, pendant control
8	6398848 (3700)	1	Bottom cover weldment
9	63166 (3700)	2	Screw, button hd Torx®
10	66129 (3700)	1	Night light and cable assembly
11	4142301S (3700)	1	Cable assembly, Trendelenburg mechanical limits
12	19124 (3700)	2	Cable tie
13	6395948 (3700)	1	Electronic plate weldment
14	35663 (3700)	5	Standoff, P.C. board
15	4840501 (3700)	2	Battery, lead acid, sealed, 12V, 7.2A
16	6583048 (3700)	1	Bracket, battery hold-down
17	63945 (3700)	1	Cable assembly, battery

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Item Number	Part Number	Quantity	Description
18	68121 (3700)	1	P.C. board assembly, logic control (replaces 65345 logic control P.C. board assembly **and** 67208 interface P.C. board assembly)
19	63960 (3700)	1	Transformer assembly
20	63944 (3700)	1	Cable assembly, lockout
21	63981 (3700)	1	Switch, lockout
22	66278 (3700)	1	Transformer assembly, OB light option
23	29891 (3700)	1	Cable clamp
24	4759 (3700)	1	Screw

Electronics Module (Sheet 2 of 3)

Figure 5-8. Electronics Module (Sheet 2 of 3)

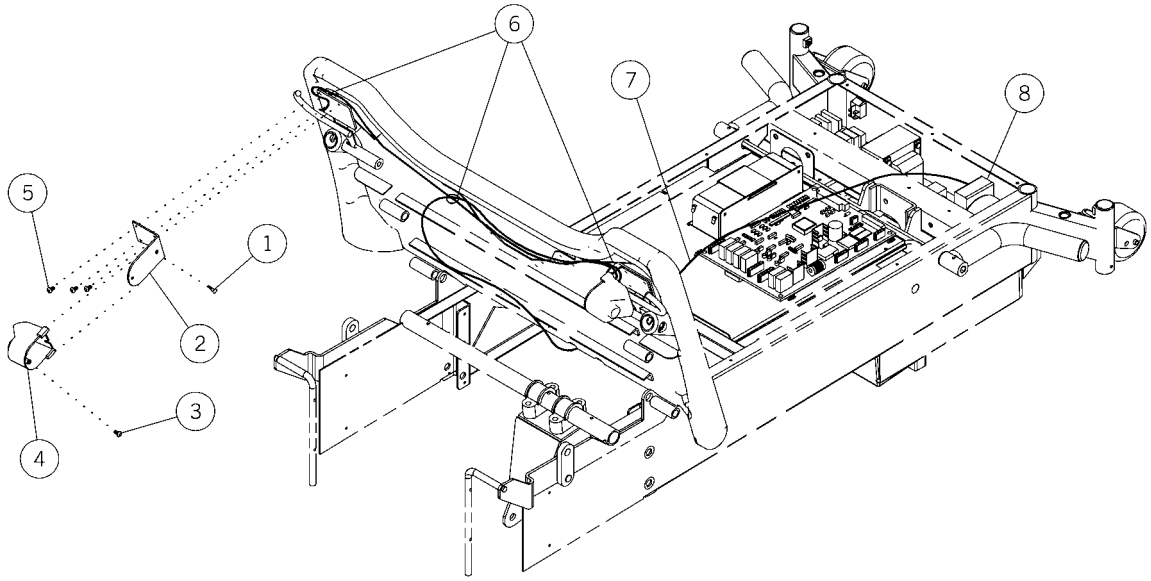

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Table 5-8. Electronics Module (Sheet 2 of 3)

Item Number	Part Number	Quantity	Description
1	40421 (3700)	2	Cable tie mount
2	66053 (3700)	2	Bracket, DC box mount
3	4214101 (3700)	2	Screw, pan hd Torx®[a] hi-lo
4	66317 (3700)	2	Box, auxiliary outlet
5	43878 (3700)	6	Screw, button hd Torx®
6	19124 (3700)	4	Cable tie
7	64009 (3700)	1	Cable assembly, OB light
8	66278 (3700)	1	Transformer assembly, OB light option

a. Torx® is a registered trademark of Textron, Inc.

Electronics Module (Sheet 3 of 3)

Figure 5-9. Electronics Module (Sheet 3 of 3)

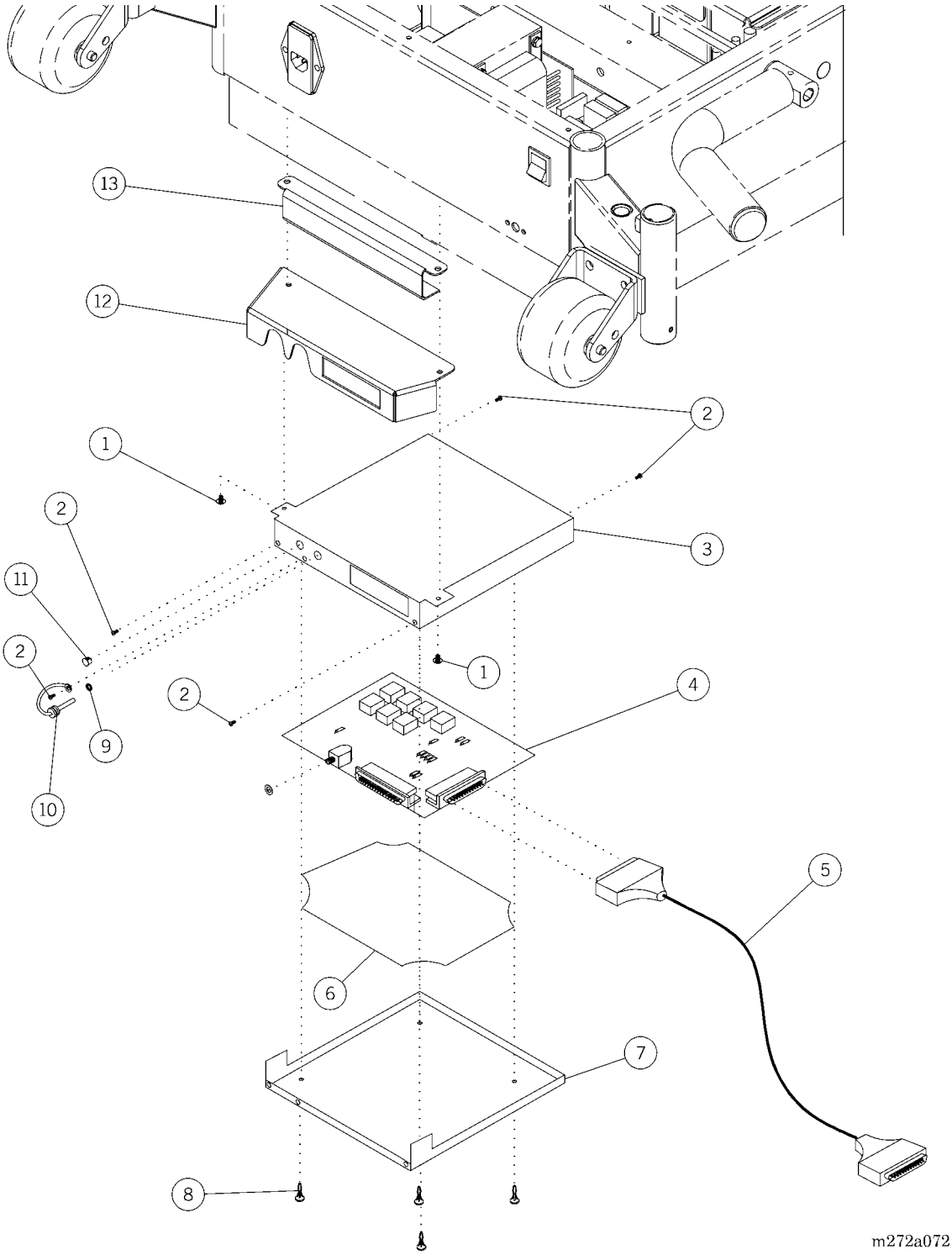

Table 5-9. Electronics Module (Sheet 3 of 3)

Item Number	Part Number	Quantity	Description
1	43878 (3700)	2	Screw, button hd Torx®[a]
2	4759 (3700)	5	Screw
3	41226PL (3700)	1	Junction box top
4	6454701 (3700) **or** 6454702 (3700)	1	PCB assembly, relay junction **or** PCB assembly, relay junction with UTV
5	66253 (3700)	1	Cable assembly, 36-conductor
6	41455 (3700)	1	Insulator, junction box
7	41306PL (3700)	1	Junction box bottom
8	3976301 (3700)	4	Standoff
9	41298 (3700)	1	Washer, nylon
10	34512 (3700)	1	Dummy plug
11	4128201 (3700)	1	Dome plug
12	6702148 (3700)	1	Protector cover
13	43031 (3700)	1	Bracket (non-SideCom® beds only)

a. Torx® is a registered trademark of Textron, Inc.

Electrical Cable Routing (Sheet 1 of 2)

Figure 5-10. Electrical Cable Routing (Sheet 1 of 2)

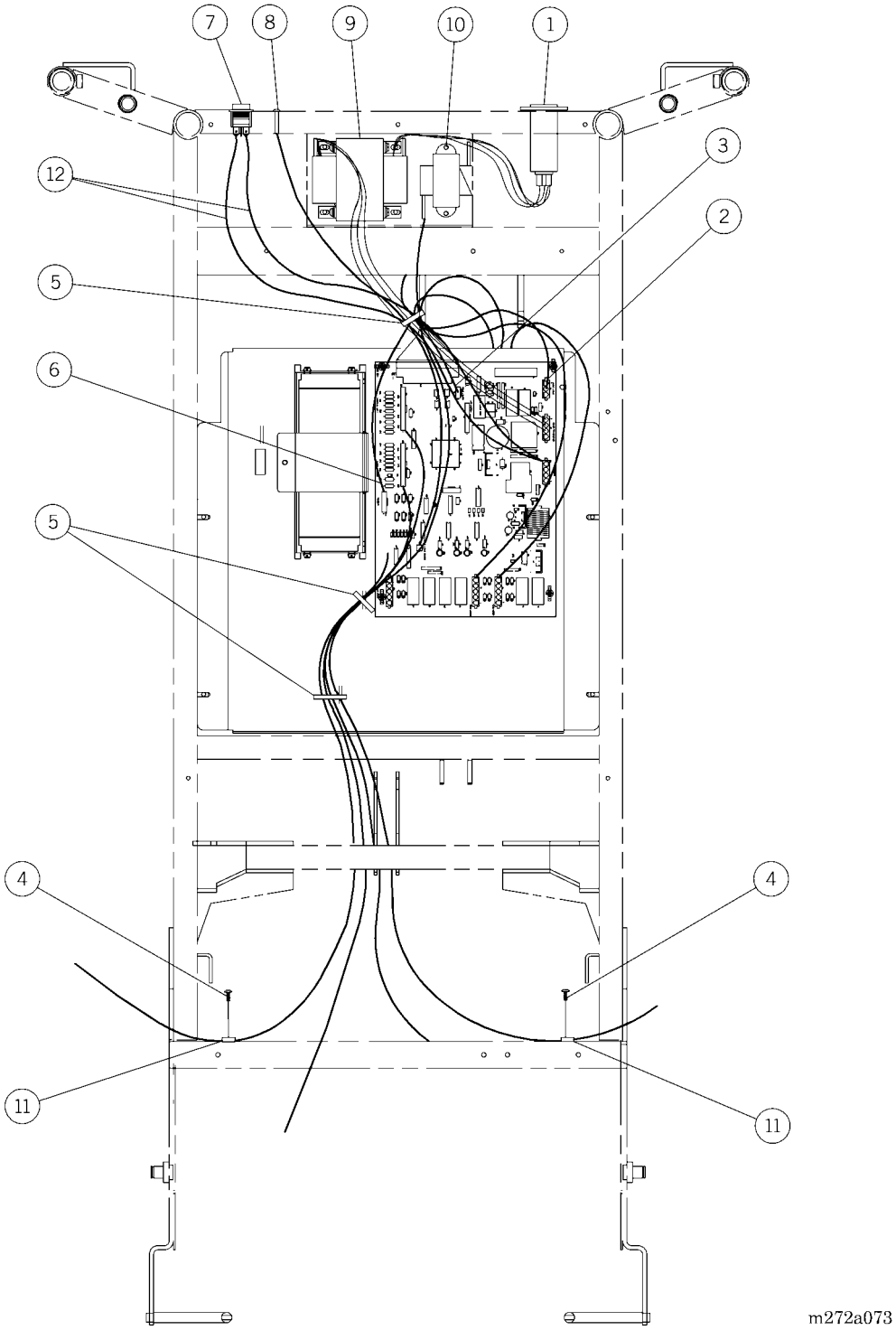

Table 5-10. Electrical Cable Routing (Sheet 1 of 2)

Item Number	Part Number	Quantity	Description
1	64002 (3700)	1	Power entry module
2	66129 (3700)	1	Night light and cable assembly
3	4142301S (3700)	1	Trendelenburg mechanical limits cable assembly
4	43878 (3700)	2	Screw, button hd Torx®[a]
5	19124 (3700)	5	Cable tie
6	4142501S (3700)	1	Cable assembly, pendant control
7	63981 (3700)	1	Switch, lockout
8	44279 (3700)	1	Night light sensor and cable assembly
9	63960 (3700)	1	Transformer assembly
10	66278 (3700)	1	Transformer assembly, OB light option
11	17292 (3700)	2	Cable clamp
12	63944 (3700)	1	Cable assembly, lockout

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Electrical Cable Routing (Sheet 2 of 2)

Figure 5-11. Electrical Cable Routing (Sheet 2 of 2)

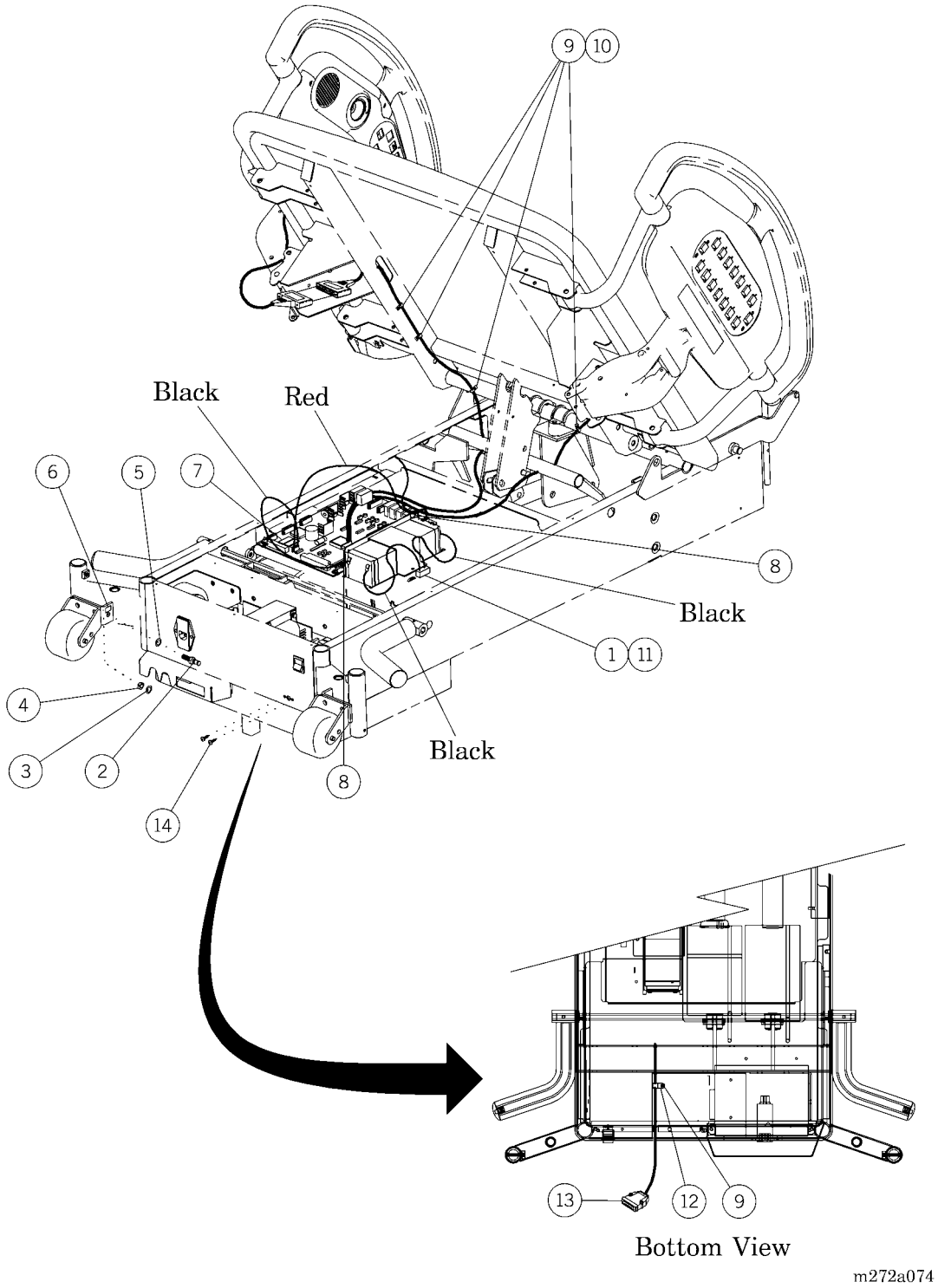

Table 5-11. Electrical Cable Routing (Sheet 2 of 2)

Item Number	Part Number	Quantity	Description
1	6394201 (3700)	1	Cable assembly, battery-to-battery
2	44125 (3700)	1	Plug (used on 230V beds only)
3	44128 (3700)	1	Lockwasher, serrated (used on 230V beds only)
4	44126 (3700)	1	Nut (used on 230V beds only)
5	44127 (3700)	1	Washer—color code green/yellow (used on 230V beds only)
6	44464 (3700)	1	Label, potential equalization (used on 230V beds only)
7	63945 (3700)	1	Cable assembly, battery
8	19124 (3700)	2	Cable tie
9	43878 (3700)	7	Screw, button hd Torx®[a]
10	17292 (3700)	6	Cable clamp
11	6642910S (3700)	1	Fuse, 10A, 32V DC, automotive style
12	27873 (3700)	1	Cable clamp (used prior to panel-mounted pendant control cable connection only)
13	4142501S (3700)	1	Cable assembly, pendant control
14	10595 (3700)	2	Screw, pan hd

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Sleep Deck Module (Sheet 1 of 3)

Figure 5-12. Sleep Deck Module (Sheet 1 of 3)

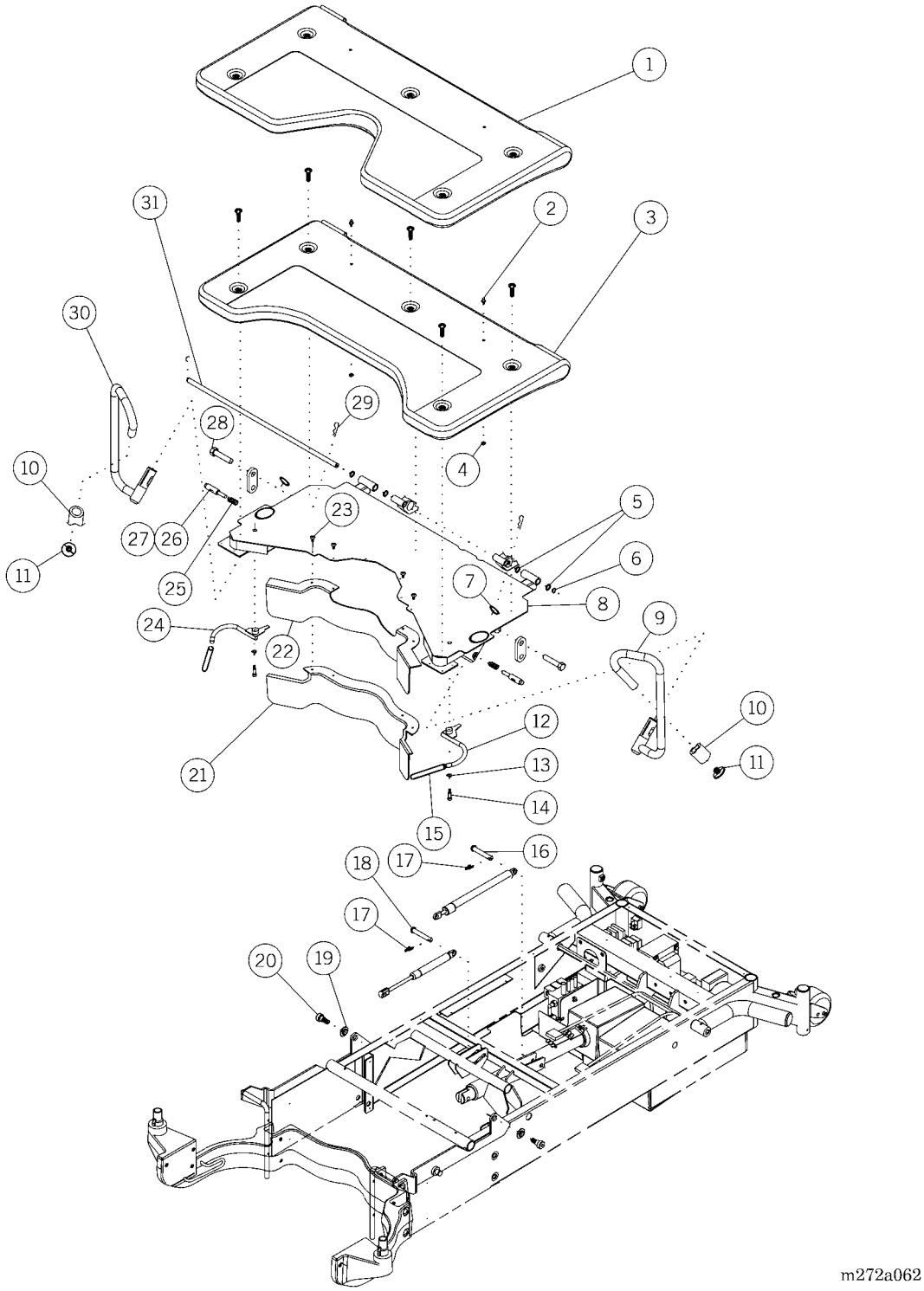

Table 5-12. Sleep Deck Module (Sheet 1 of 3)

Item Number	Part Number	Quantity	Description
1	41059 (3700)	1	Panel, V seat
2	40958 (3700)	2	Snap, mattress retaining
3	41060 (3700)	1	Panel, U seat
4	777 (3700)	2	Hex locknut
5	41047 (3700)	4	Washer, nylon
6	43552 (3700)	2	Ring, retaining
7	40817 (3700)	2	Ring, retaining
8	6392148 (3700)	1	Seat section weldment
9	659660148 (3700)	1	Labor grip weldment, lh
10	430220263 (3700)	2	Foam tube, ¾" ID x 25"
11	4116363 (3700)	2	Trendelenburg handle plug
12	6394801PL (3700)	1	Labor grip release weldment, lh
13	42617 (3700)	2	Washer, spring
14	90338-10 (3700)	2	Screw, shoulder
15	62919 (3700)	2	Cap, release handle, vinyl dipped
16	6314306PL (3700)	1	Clevis pin
17	61615 (3700)	2	Rue ring cotter
18	61653PL (3700)	1	Clevis pin
19	9026307 (3700)	2	Bearing, DU self-lube
20	9026006 (3700)	2	Screw, shoulder
21	4127048 (3700)	1	Front shroud, U seat
22	4127148 (3700)	1	Front shroud, V seat
23	43878 (3700)	4	Screw, button hd Torx®[a]
24	6394802PL (3700)	1	Labor grip release weldment, rh
25	40812 (3700)	2	Spring
26	40811 (3700)	2	Pin, locking
27	36958 (3700)	As required	Lubricant
28	65967 (3700)	2	Clevis pin
29	49257 (3700)	2	Hairpin

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Item Number	Part Number	Quantity	Description
30	659660248 (3700)	1	Labor grip weldment, rh
31	64006PL (3700)	1	Pin, head/seat drive

NOTES:

Sleep Deck Module (Sheet 2 of 3)

Figure 5-13. Sleep Deck Module (Sheet 2 of 3)

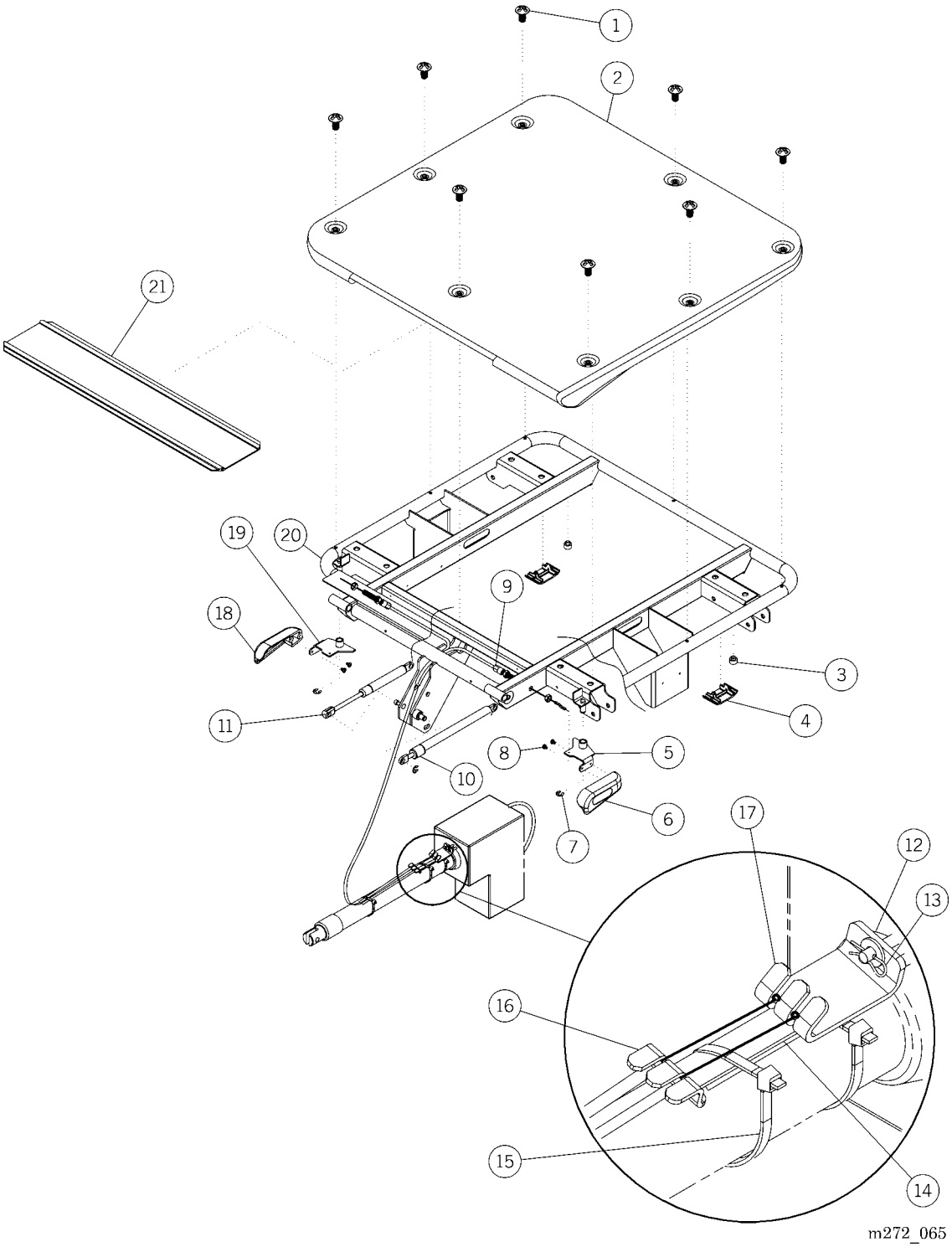

Table 5-13. Sleep Deck Module (Sheet 2 of 3)

Item Number	Part Number	Quantity	Description
1	65986 (3700)	13	Screw
2	41061 (3700)	1	Head deck
3	41344 (3700)	2	Bumper plug
4	67088 (3700)	2	Slide
5	6393901PL (3700)	1	Handle weldment, CPR, lh
6	6393801 (3700)	1	CPR handle, lh
7	35326 (3700)	2	E-ring
8	9033907 (3700)	4	Screw, locking
9	64007 (3700)	2	Release cable assembly
10	65912 (3700)	1	Damper, CPR assist
11	64012 (3700)	1	Gas spring, CPR assist
12	61440 (3700)	1	Washer
13	44352 (3700)	1	Hairpin
14	40827 (3700)	As required	Dual-sided adhesive tape
15	19124 (3700)	3	Cable tie
16	6394348 (3700)	1	Bracket, CPR cable attachment
17	6395348 (3700)	1	Bracket, CPR cable housing
18	6393802 (3700)	1	CPR handle, rh
19	6393902PL (3700)	1	Handle weldment, CPR, rh
20	6395548 (3700)	1	Head section weldment
21	4106848 (3700)	1	Splash channel

Sleep Deck Module (Sheet 3 of 3)

Figure 5-14. Sleep Deck Module (Sheet 3 of 3)

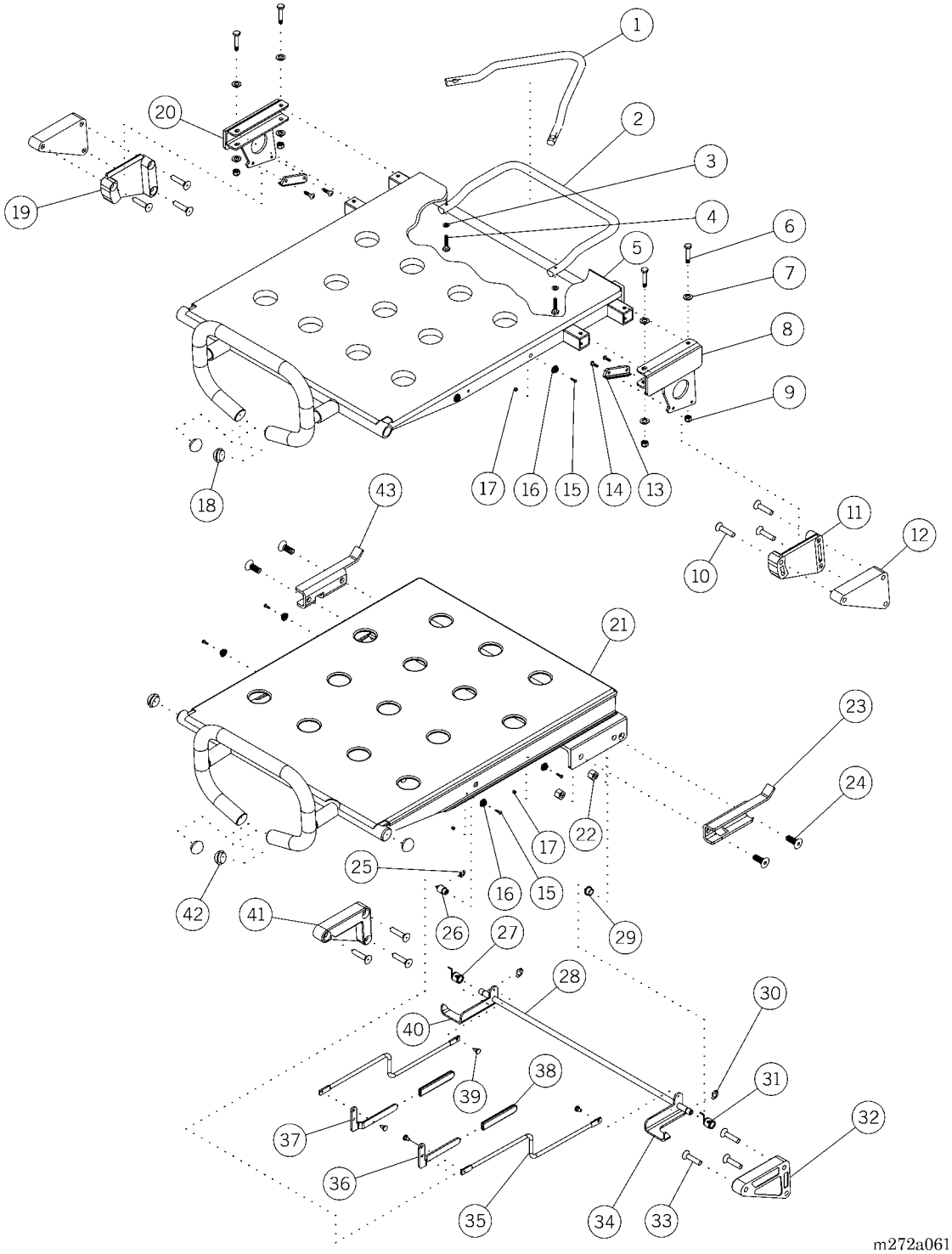

Table 5-14. Sleep Deck Module (Sheet 3 of 3)

Item Number	Part Number	Quantity	Description
1	42575 (3700)	1	Wireform, V seat
2	42576 (3700)	1	Wireform, U seat
3	1012 (3700)	2	Washer
4	9001828 (3700)	2	Cap screw, hex hd
5	6724448 (3700) **or** 448170148 (3700)	1	Foot section weldment, lift-off (used with 67415 yoke spacer and 4257401 cap screw only) **or** Foot section weldment, lift-off (used with 42574 cap screw only)
6	9001828 (3700)	4	Cap screw, hex hd
7	1012 (3700)	8	Washer
8	41204S (3700)	1	Latch weldment, lh
9	4435 (3700)	4	Locknut
10	4257401 (3700) **or** 42574 (3700)	6	Cap screw, hex socket flat hd (used with 6724448 foot section weldment and 67415 yoke spacer only) **or** Cap screw, hex socket flat hd (used with 448170148 foot section weldment only)
11	61510 (3700)	1	Latch, foot, lh
12	67415 (3700)	2	Spacer, yoke (used with 6724448 foot section weldment and 4257401 cap screw only)
13	41104 (3700)	2	Bumper, foot section
14	90058-06 (3700)	4	Screw, truss hd cross, patchlock
15	44768 (3700)	4	Screw, flat hd machine
16	41052 (3700)	4	Stud snap
17	15250 (3700)	4	Locknut, washer-base
18	46765 (3700)	2	Hole plug
19	61509 (3700)	1	Latch, foot, rh
20	41203 (3700)	1	Latch weldment, rh
21	615140148 (3700)	1	Foot section weldment, slide-off

Item Number	Part Number	Quantity	Description
22	9023428 (3700)	4	Locknut
23	6356601PL (3700)	1	Bracket weldment, lh
24	63611 (3700)	4	Screw, hex socket flat hd
25	18890 (3700)	2	Truarc ring
26	61532PL (3700)	2	Pivot stud
27	61534 (3700)	1	Spring, non-corrosive torsion
28	63565 (3700)	1	Pivot shaft
29	61525 (3700)	2	Bearing
30	35326 (3700)	4	E-ring
31	6153401 (3700)	1	Spring, torsion, lh
32	61537 (3700)	1	Bracket, slide, lh
33	42574 (3700)	6	Screw
34	6341601PL (3700)	1	Latch weldment, lh
35	61529PL (3700)	2	Connecting rod
36	6153002PL (3700)	1	Release handle, lh
37	6153001PL (3700)	1	Release handle, rh
38	61533 (3700)	2	Vinyl cap
39	61531PL (3700)	4	Link rivet
40	6341602PL (3700)	1	Latch weldment, rh
41	61536 (3700)	1	Bracket, slide, rh
42	46765 (3700)	4	Hole plug
43	6356602PL (3700)	1	Bracket weldment, rh

NOTES:

Label Module (Sheet 1 of 4)

Figure 5-15. Label Module (Sheet 1 of 4)

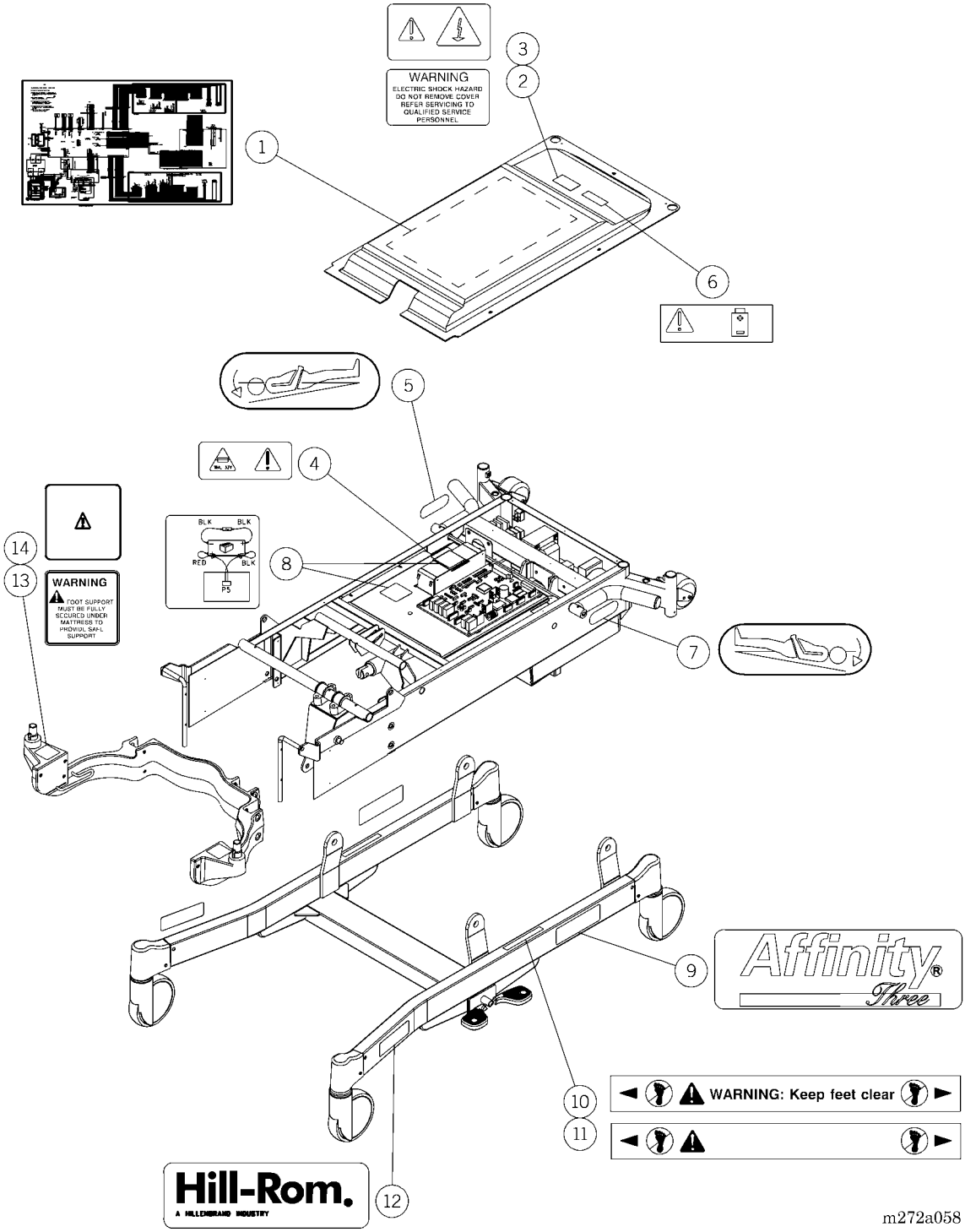

Table 5-15. Label Module (Sheet 1 of 4)

Item Number	Part Number	Quantity	Description
1	6399301 (3700)	1	Wiring diagram
2	67020 (3700)	2	Label, caution, electrical shock
3	6702000 (3700)	2	Label, warning, international
4	6583102 (3700)	1	Label, power inlet
5	6399602 (3700)	1	Label, Trendelenburg, rh
6	66870 (3700)	1	Label, battery warning
7	6399601 (3700)	1	Label, Trendelenburg, lh
8	65989 (3700)	1	Label, battery caution
9	64004 (3700)	1	Label, base frame
10	4583600 (3700)	2	Label, foot clear, international
11	45836 (3700)	2	Label, foot clear, Euro
12	64005 (3700)	1	Label, base, Hill-Rom
13	45834 (3700)	2	Label, foot support warning
14	4583400 (3700)	2	Label, foot support warning, international
15	63995 (3700)◆	2	Label, CPR
16	65382 (3700)◆	2	Label, auxiliary light
17	65833 (3700)◆	2	Label, siderail warning
18	6583300 (3700)◆	2	Label, siderail warning, international
19	66654 (3700)◆	2	Overlay, caregiver, blank
20	66655 (3700)◆	2	Overlay, patient, blank
21	6665801 (3700)◆	2	Label, speaker control, blank
22	6665802 (3700)◆	2	Label, volume control, blank

NOTE:
◆ Items 15 through 22 are not shown in figure 5-15 on page 5-46.

Label Module (Sheet 2 of 4)

Figure 5-16. Label Module—Siderail (Sheet 2 of 4)

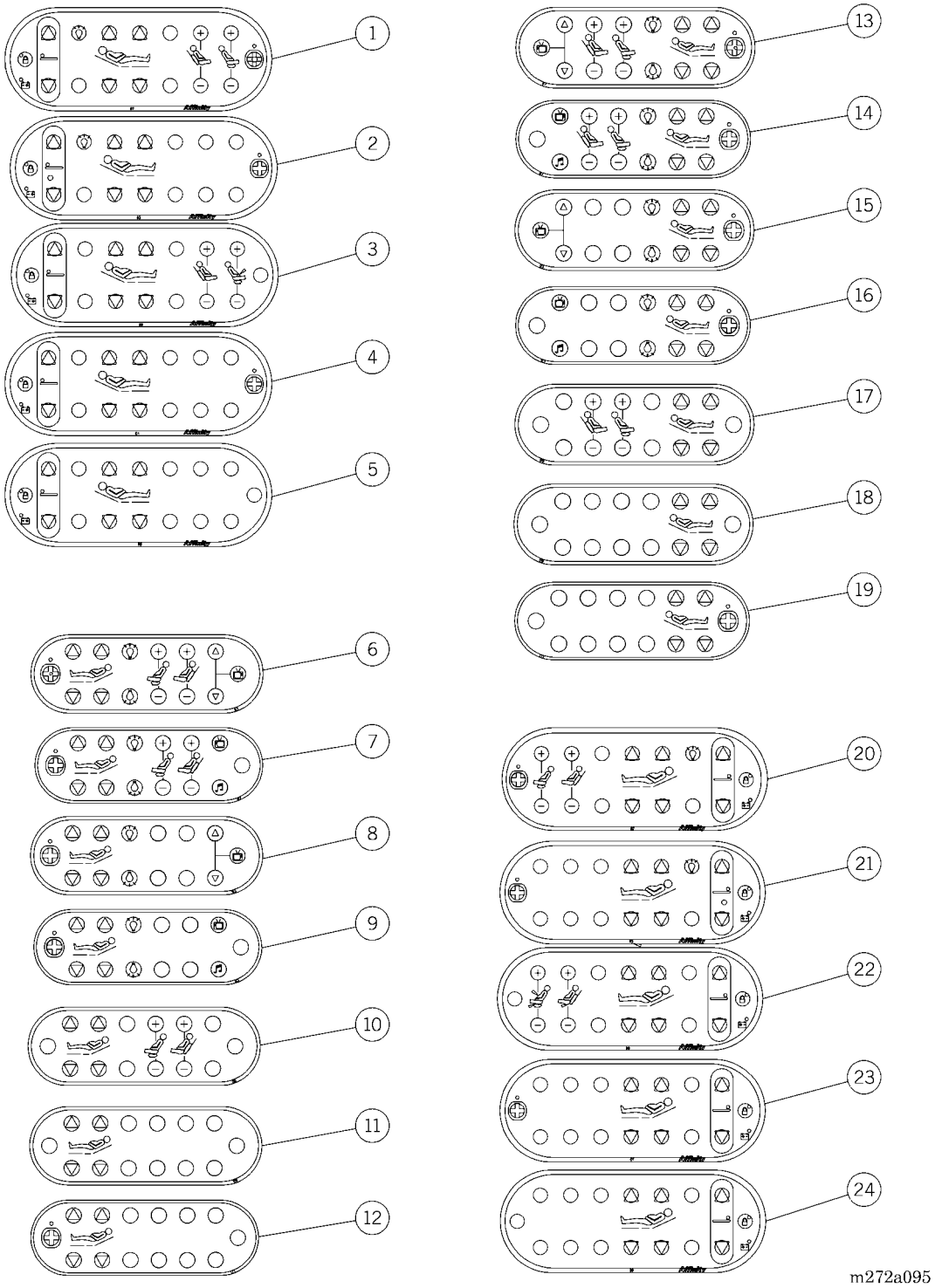

Table 5-16. Label Module—Siderail (Sheet 2 of 4)

Item Number	Part Number	Quantity	Description
1	6396507 (3700)	1	Overlay, caregiver, rh
2	6396503 (3700)	1	Overlay, caregiver, rh
3	6396500 (3700)	1	Overlay, caregiver, rh
4	6396501 (3700)	1	Overlay, caregiver, rh
5	6396509 (3700)	1	Overlay, caregiver, rh
6	6396697 (3700)	1	Overlay, patient, rh
7	6396607 (3700)	1	Overlay, patient, rh
8	6396693 (3700)	1	Overlay, patient, rh
9	6396603 (3700)	1	Overlay, patient, rh
10	6396600 (3700)	1	Overlay, patient, rh
11	6396609 (3700)	1	Overlay, patient, rh
12	6396601 (3700)	1	Overlay, patient, rh
13	6396797 (3700)	1	Overlay, patient, lh
14	6396707 (3700)	1	Overlay, patient, lh
15	6396793 (3700)	1	Overlay, patient, lh
16	6396703 (3700)	1	Overlay, patient, lh
17	6396700 (3700)	1	Overlay, patient, lh
18	6396709 (3700)	1	Overlay, patient, lh
19	6396701 (3700)	1	Overlay, patient, lh
20	6396807 (3700)	1	Overlay, caregiver, lh
21	6396803 (3700)	1	Overlay, caregiver, lh
22	6396800 (3700)	1	Overlay, caregiver, lh
23	6396801 (3700)	1	Overlay, caregiver, lh
24	6396809 (3700)	1	Overlay, caregiver, lh

Label Module (Sheet 3 of 4)

Figure 5-17. Label Module (Sheet 3 of 4)

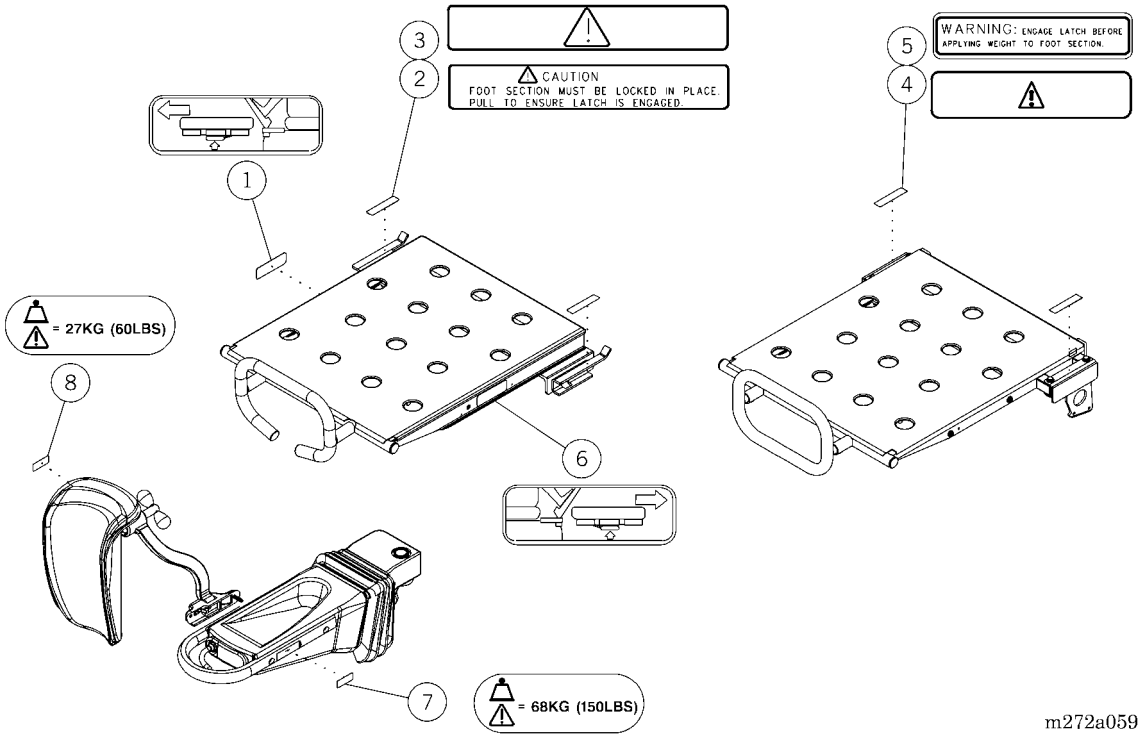

Table 5-17. Label Module (Sheet 3 of 4)

Item Number	Part Number	Quantity	Description
1	6153501 (3700)	1	Label, foot release, rh
2	63609 (3700)	2	Label, slide off foot section caution
3	6360900 (3700)	2	Label, slide off foot section caution, international
4	45832 (3700)	1	Label, foot latch warning
5	4583200 (3700)	1	Label, foot latch warning, international
6	6153502 (3700)	1	Label, foot release, lh
7	6709011 (3700)	2	Label, weight limit, foot support
8	6709003 (3700)	2	Label, weight limit, calf support

Label Module (Sheet 4 of 4)

Figure 5-18. Label Module (Sheet 4 of 4)

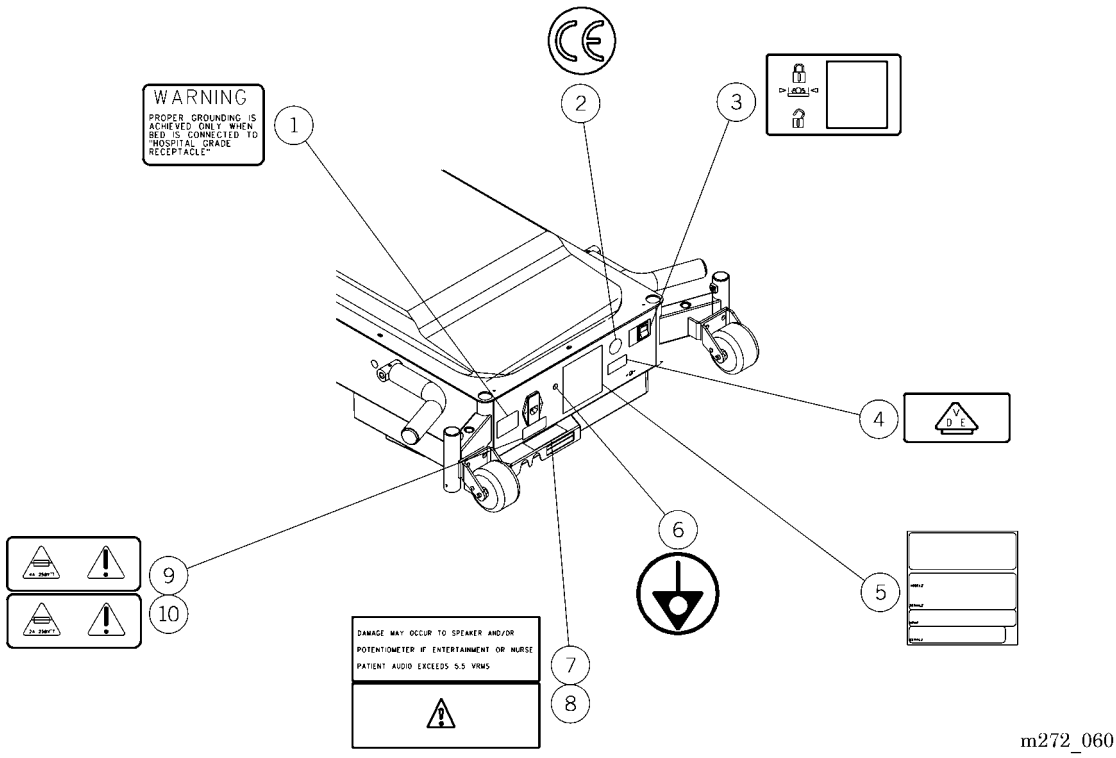

Table 5-18. Label Module (Sheet 4 of 4)

Item Number	Part Number	Quantity	Description
1	67091 (3700)	1	Grounding reliability
2	46770 (3700)	1	Label CE
3	66859 (3700)	1	Label, lockout
4	42446 (3700)	1	Label, VDE (if applicable)
5	6274006 (3700)	1	Label, serial number blank
6	44464 (3700)	1	Label, potential equalization
7	45830 (3700)	1	Label, caution
8	4583000 (3700)	1	Label, caution, international
9	65831 (3700)	1	Label, power inlet
10	6583101 (3700)	1	Label, power inlet, international

Foot Support Module

Figure 5-19. Foot Support Module

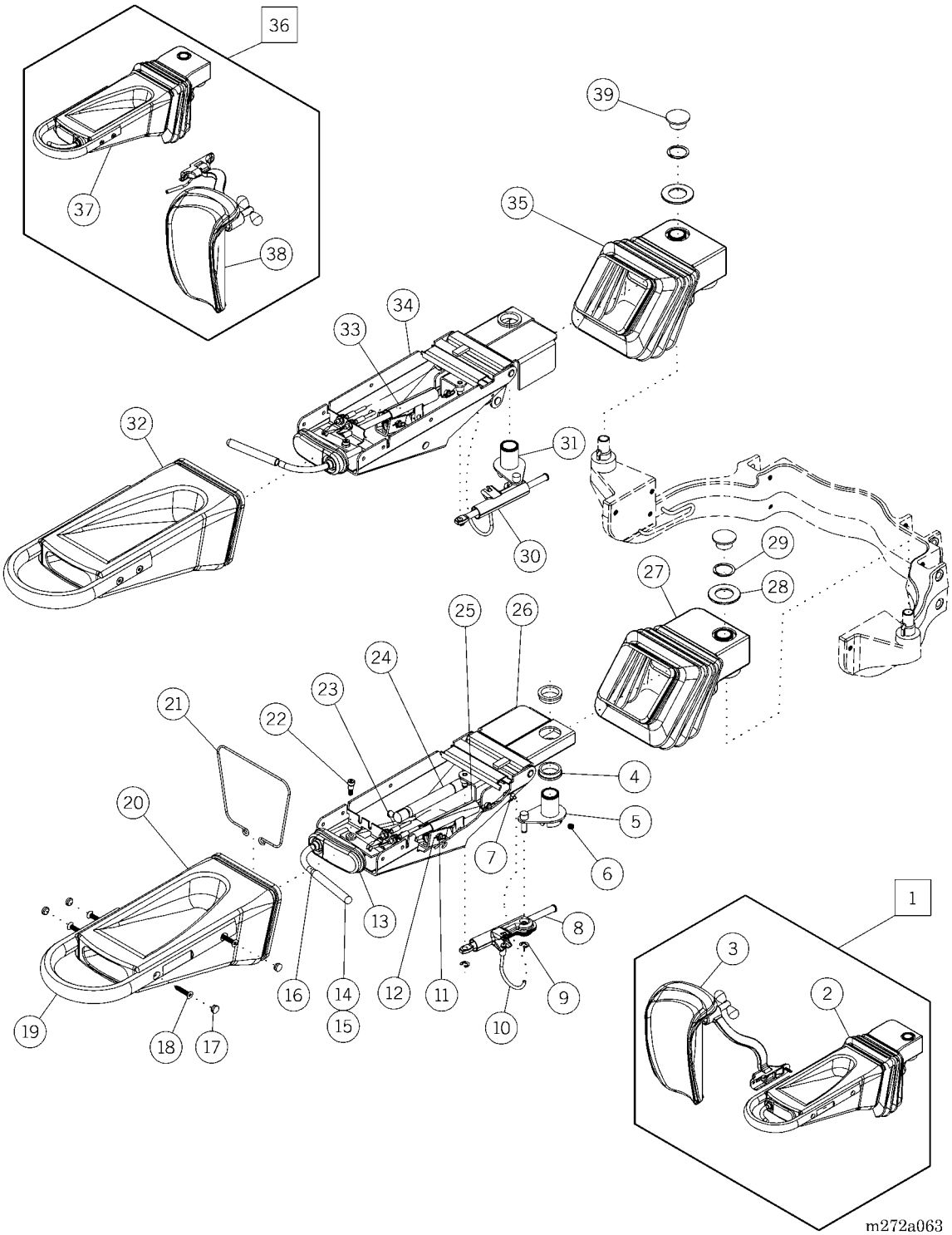

Table 5-19. Foot Support Module

Item Number	Part Number	Quantity	Description
1	6563703 (3700)	1	Foot support module with calf support, lh
2	6563701S (3700)	1	Foot support module, lh
3	6697001S (3700)	1	Calf support module, lh
4	65700 (3700)	4	Oilite®[a] bushing
5	6572401PL (3700)	1	Cam post weldment, lh
6	66966 (3700)	2	Set screw, cup point
7	19124 (3700)	2	Cable tie
8	6580101 (3700)	1	Mechlok®[b], lh
9	35325 (3700)	4	E-ring
10	65799 (3700)	2	Cable, foot abduction
11	6604202 (3700)	4	Clevis pin
12	61615 (3700)	4	Rue ring cotter
13	65829 (3700)	2	Toe boot
14	62919 (3700)	2	Cap, release handle, vinyl dipped
15	39172 (3700)	As required	Adhesive
16	65699PL (3700)	2	Release handle weldment
17	67686 (3700)	8	Plug
18	64466 (3700)	8	Screw, Torx®[c]
19	62959 (3700)	2	Handle/bumper, foot support
20	6604101 (3700)	1	Heel cup, foot support, lh
21	67794 (3700)	2	Wireform, bellows
22	9025806 (3700)	1	Screw, shoulder
23	65800 (3700)	2	Cable, foot tilt
24	66152 (3700)	2	Gas spring, foot support
25	6696501 (3700)	1	Mechlok®, foot tilt, lh
26	656320148 (3700)	1	Foot rest weldment, lh
27	6582801 (3700)	1	Bellows, foot support, lh

a. Oilite® is a registered trademark of Beemer Precision, Incorporated.
b. Mechlok® is a registered trademark of P.L. Porter Company.
c. Torx® is a registered trademark of Textron, Inc.

Item Number	Part Number	Quantity	Description
28	66430 (3700)	2	Washer, plastic
29	65964 (3700)	2	Snap ring
30	6580102 (3700)	1	Mechlok®[a], rh
31	6572402PL (3700)	1	Cam post weldment, rh
32	6604102 (3700)	1	Heel cup, foot support, rh
33	6696502 (3700)	1	Mechlok®, foot tilt, rh
34	656320248 (3700)	1	Foot rest weldment, rh
35	6582802 (3700)	1	Bellows, foot support, rh
36	6563704 (3700)	1	Foot support module with calf support, rh
37	6563702S (3700)	1	Foot support module, rh
38	6697002S (3700)	1	Calf support module, rh
39	68112 (3700)	2	Foot support post plug

a. Mechlok® is a registered trademark of P.L. Porter Company.

NOTES:

Calf Support Module

Figure 5-20. Calf Support Module

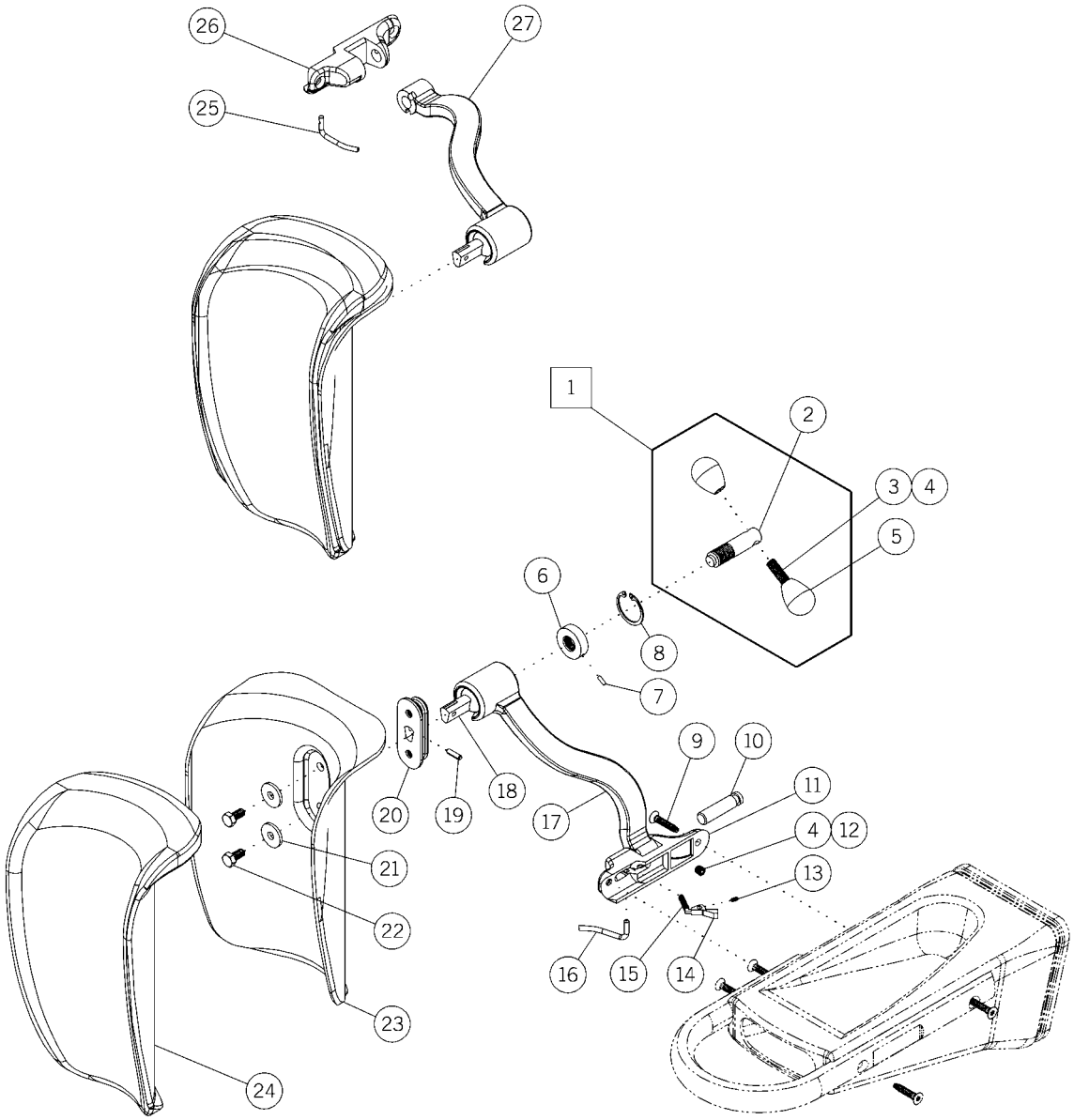

Table 5-20. Calf Support Module

Item Number	Part Number	Quantity	Description
1	68117 (3700)	2	Knob assembly, calf support
2	37145 (3700)	2	Lock stud
3	37146 (3700)	4	Knob stud
4	8651 (3700)	As required	Loctite®[a] #262
5	3714463 (3700)	4	Knob
6	66975 (3700)	2	Threaded insert
7	38677 (3700)	2	Roll pin
8	67258 (3700)	2	Ring, retaining, internal
9	6446601 (3700)	2	Screw, Torx®[b]
10	66979 (3700)	2	Pin, calf support
11	6696801 (3700)	1	Mount, calf support, lh
12	66966 (3700)	2	Set screw, cup point
13	67260 (3700)	2	Set screw cup point
14	66971 (3700)	2	Key, calf support
15	67259 (3700)	2	Spring
16	6697301 (3700)	1	Pull handle, lh
17	6696701 (3700)	1	Arm, calf support, lh
18	47598 (3700)	2	Ball and rod
19	23261 (3700)	2	Roll pin
20	41259 (3700)	2	Bracket, calf support
21	19918 (3700)	4	Washer
22	19224 (3700)	4	Bolt
23	4126048 (3700)	2	Former, calf support
24	67247 (3700)	2	Cover
25	6697302 (3700)	1	Pull handle, rh
26	6696802 (3700)	1	Mount, calf support, rh
27	6696702 (3700)	1	Arm, calf support, rh

a. Loctite® is a registered trademark of Loctite Corporation
b. Torx® is a registered trademark of Textron, Inc.

Air Module

Figure 5-21. Air Module

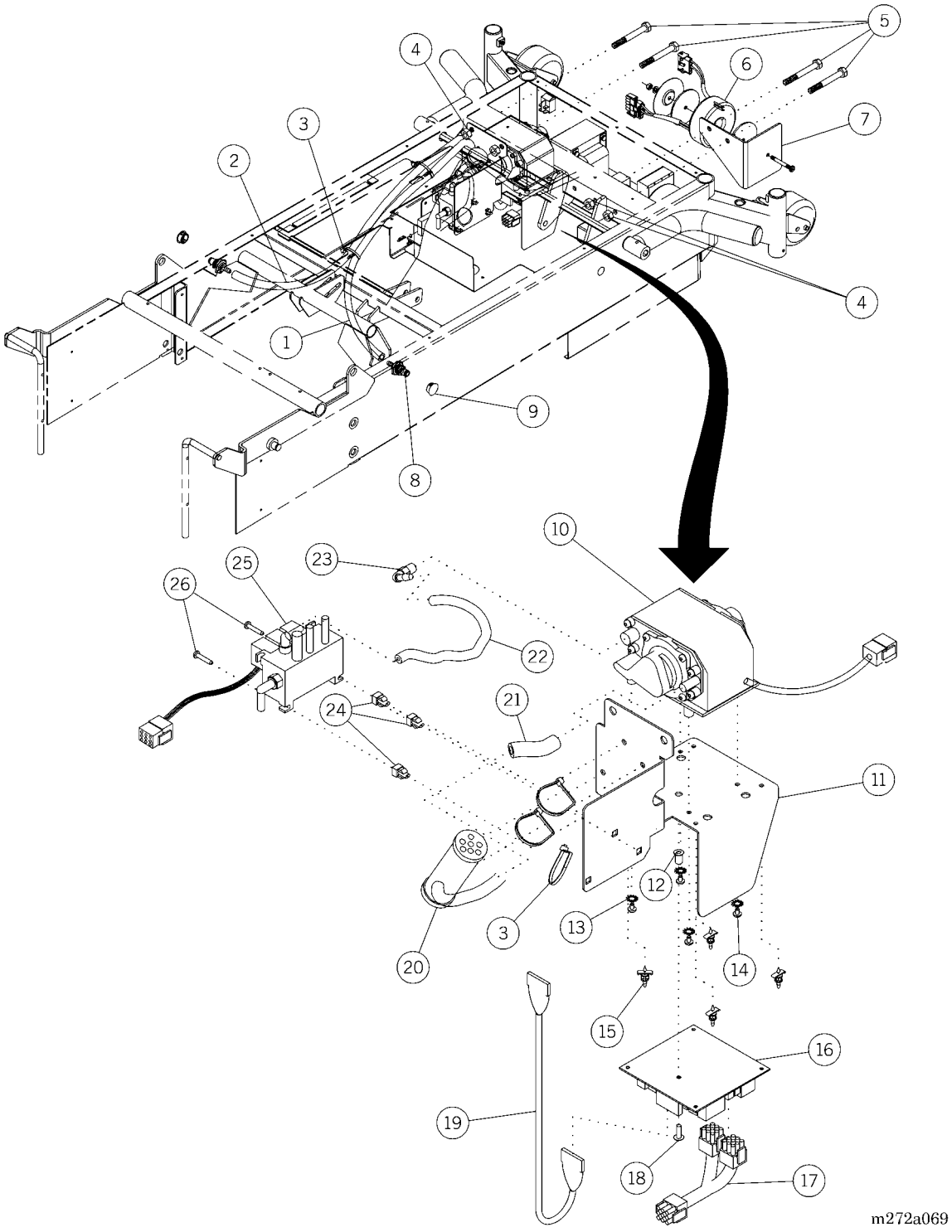

Table 5-21. Air Module

Item Number	Part Number	Quantity	Description
1	4698031 (3700)	1	Air hose
2	46980-35 (3700)	1	Air hose, lumbar seat, rh
3	19124 (3700)	6	Cable tie
4	831 (3700)	4	Locknut
5	90016-40 (3700)	4	Cap screw, hex hd
6	66135 (3700)	1	Transformer and cable assembly, 220V
7	64008 (3700)	1	Bracket, transformer mount—220V
8	41466 (3700)	2	Quick coupler, male
9	3815606 (3700)	2	Hole plug, ¾" light neutral
10	64095 (3700)	1	Linear air pump
11	6686648 (3700)	1	Bracket, compressor mount
12	47070 (3700)	1	Rivnut
13	947 (3700)	4	Lockwasher, #8 internal tooth
14	987 (3700)	4	Screw
15	35663 (3700)	4	Standoff, P.C. board
16	4118802 (3700)	1	PCB assembly, mattress driver
17	66216 (3700)	1	Power cable, solenoid
18	9005811 (3700)	1	Screw
19	6621501 (3700)	1	Cable, digital mattress board
20	47103 (3700)	1	Muffler assembly
21	4760602 (3700)	1	Tubing, vacuum
22	4698008 (3700)	1	Air hose
23	64096 (3700)	1	Fitting, elbow—¼" hose
24	46981 (3700)	3	Standoff
25	4710501 (3700)	1	Manifold, 3 station
26	15380 (3700)	2	Screw

Headboard

Figure 5-22. Headboard

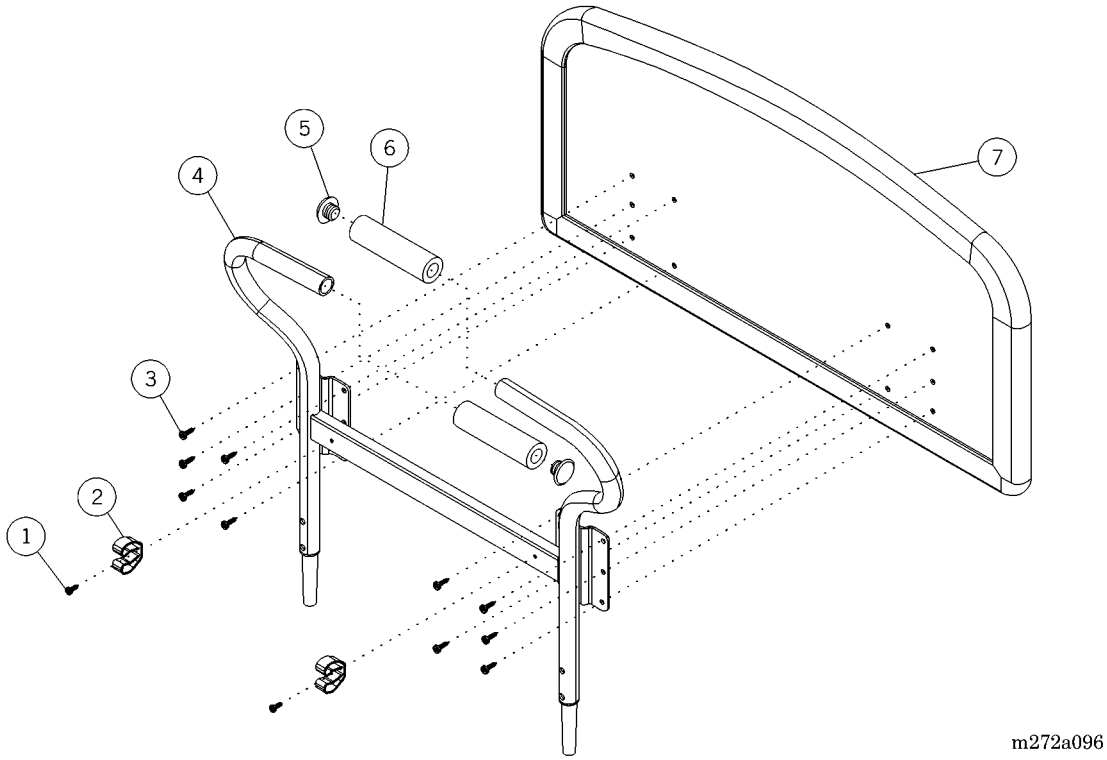

Table 5-22. Headboard

Item Number	Part Number	Quantity	Description
1	43878 (3700)	2	Screw, button hd Torx®[a]
2	37664 (3700)	2	Clip, IV
3	31773 (3700)	10	Screw
4	40995 (3700)	1	Handle weldment, headboard
5	42600 (3700)	2	Plug
6	42588 (3700)	2	Grip, handle, foam
7	41114 (3700) **or** 112769 (3700) **or** 112770 (3700)	1	Headboard, wood (oak or cherry) **or** Headboard, wood—Liberty Hill (cherry) **or** Headboard, wood—Freedom Hill (oak)

a. Torx® is a registered trademark of Textron, Inc.

Chapter 6
General Procedures

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6

NOTES:

Cleaning

WARNING:
Follow the product manufacturer's instructions. Failure to do so could result in personal injury or equipment damage.

SHOCK HAZARD:
Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

SHOCK HAZARD:
Do not expose the unit to excessive moisture which would allow liquid to pool. Personal injury or equipment damage could occur.

CAUTION:
Do not use harsh cleansers or detergents such as scouring pads and heavy-duty grease removers, or solvents such as toluene, xylene, and acetone. Equipment damage could occur.

CAUTION:
Ensure that the metal platform is dry before placing the mattress back onto the bed. Failure to do so could result in equipment damage.

If there is no visible soilage with possible body fluids, we recommend that you clean the unit with a mild detergent and warm water. If disinfection is desired, you may use a combination cleanser/disinfectant as explained in "Disinfecting" on page 6-4. In either case, ensure that the metal platform is dry before placing the mattress back onto the bed.

Steam Cleaning

Do not use any steam cleaning device on the unit. Excessive moisture can damage mechanisms in this unit.

Cleaning Hard to Clean Spots

To remove difficult spots or stains, we recommend that you use standard household cleansers and a soft bristle brush. To loosen heavy, dried-on soil, you may first need to saturate the spot.

Disinfecting

WARNING:
Adhere to the *Infection Control Policies and Procedures* from Hill-Rom. Failure to do so could result in the spread of infection.

When there is visible soilage and also between patient use, we recommend that you disinfect the unit using an EPA registered (US only), tuberculocidal, disinfectant.

Dilute the disinfectant as specified on the manufacturer's label.

Draping the Mattress

CAUTION:
Mattress damage caused by improper draping and/or cleaning procedures is not covered by warranty.

Correct draping techniques are essential in helping to preserve the life of the mattress. Drapes must be fluid repellent. The full-size, B7831, labor and delivery drape effectively covers the lower three-quarters of the bedding throughout labor. Additional pads or towels placed under the patient will keep fluid from reaching the edges of the drape. This keeps the sheets clean and dry while preventing fluid exposure to the mattress.

CAUTION:
Standard OB packs and paper drapes will not keep the sheets dry.

Repeated soaking and scrubbing of mattress materials will accelerate wear and eventually destroy mattress seals, causing fluids to leak into the cushions.

Caring for the Wood Components

Wood is selected for use on beds because of its beauty and warmth. All Hill-Rom wood products are treated with a resin-based sealer and finish that provide resistance to abrasion, staining, and fluids. Many disinfectant/cleansers have a softening effect on any painted or finished surface if used in high concentrations. Diluted ammonia or detergent, may be used.

The bed should be cleaned by wiping a soft dampened cloth over the surface, followed by wiping with a dry cloth. At no time should a wet cloth be allowed

to lay on the surface. Any liquid spilled on the surface should be wiped up immediately. Any liquid allowed to lie on the surface unattended may damage the finish.

For protection of the finish, we recommend using a liquid furniture polish. Polish about once a month, and wipe off any excess with a soft dry cloth. Have any nicks or scrapes repaired to prevent water damage.

Servicing the Bed

WARNING:
Powered bed mechanisms can cause serious injury. Operate the bed only with persons clear of mechanisms. Failure to do so could result in personal injury or equipment damage.

WARNING:
Unplug the bed from its power source and engage the lockout control during routine maintenance or cleaning. Refer to the *Affinity® Three Birthing Bed User Manual* and specific sections in this service manual for additional precautions. Failure to do so could result in personal injury or equipment damage.

WARNING:
Ensure all electrical/mechanical loads are removed prior to maintenance/repair of the bed's drive system or other mechanical assemblies. Failure to do so could result in personal injury or equipment damage.

When you work with the bed in the high position, set the brakes and place 2 x 4's between the base frame and lift arms. This will help prevent injury in case someone accidentally actuates the bed down switch.

If service on the bed requires that it be placed on its side, be sure to store and pad the siderails to prevent damage. Also, remove the brake/steer pedal to prevent damage.

Component Handling

CAUTION:
To prevent component damage, ensure that your hands are clean, and **only** handle a P.C. board by its edges. Failure to do so could result in equipment damage.

CAUTION:
When handling electronic components, wear an antistatic strap. Failure to do so could result in component damage.

CAUTION:
For shipping and storage, place the removed P.C. board in an antistatic protective bag. Equipment damage can occur.

P.C. Boards

When servicing P.C. boards, follow good handling practices. Mishandling a P.C. board can cause the following:

- P.C. board damage
- Shortened P.C. board life
- Unit malfunctions

Observe the following P.C. board handling rules:

- Ensure that hands are clean and free of moisture, oily liquids, etc.
- **Only** handle a P.C. board by its outer edges.
- Do not touch the P.C. board components. Finger contact with the board surface and/or with its components can leave a deposit that will result in board (and component) deterioration.
- When working with electronics, wear an appropriate antistatic strap, and ensure that it is properly grounded.
- Service the removed P.C. board at a static-free workstation that is properly grounded.
- For shipping and storage, place the removed P.C. board in an antistatic protective bag.

Lubrication Requirements

WARNING:
Follow the product manufacturer's instructions. Failure to do so could result in personal injury or equipment damage.

CAUTION:
Do not use silicone-based lubricants. Equipment damage could occur.

Hill-Rom uses maintenance-free DU bushings at major load and pivot points throughout the bed. These bushings are designed to run dry **without lubrication**. If the bushing squeaks during operation, apply anti-seize compound to its bearing surface.

WARNING:
Visually inspect the bushings annually. If wear is apparent, replace them. Failure to do so could result in personal injury or equipment damage.

The following lubricants can be safely used on the DU bushings:

- P/N SA4269 anti-seize lube (aerosol can)
- P/N 37929 anti-seize lube (brush top lid)

Oilite®[1] bearings and bushings are utilized in several places on the system. By retaining oil, the pores give a self-lubricating quality to the bearings and bushings. If any silicone-based lubricant is applied to the bearings and bushings or anywhere else on the system, this self-lubricating quality is neutralized.

It is safe to apply the following lubricants to the system (see table 6-1 on page 6-7):

Table 6-1. Lubricants

Part Number	Description
8252 (100)	2 oz m-1 oil (apply to Oilite® bearings and bushings)
SA3351 (100)	4 ounce lithium grease

1. Oilite® is a registered trademark of Beemer Precision, Incorporated.

Preventive Maintenance

WARNING:
Only facility-authorized personnel should perform preventive maintenance on the Affinity® Three Birthing Bed. Preventive maintenance performed by unauthorized personnel could result in personal injury or equipment damage.

The Affinity® Three Birthing Bed requires an effective maintenance program. We recommend that you perform quarterly preventive maintenance (PM) and testing for Joint Commission on Accreditation of Healthcare Organizations (JCAHO). PM and testing not only meet JCAHO requirements but will help ensure a long, operative life for the Affinity® Three Birthing Bed. PM will minimize downtime due to excessive wear.

The following PM schedule (see table 6-2 on page 6-11) guides you through a normal PM procedure on the Affinity® Three Birthing Bed. During this PM process, check each item on the schedule, and make the necessary adjustments.

Follow the PM schedule with the corresponding PM checklist (see table 6-3 on page 6-14). This checklist is designed to keep a running maintenance history and subsequent repair costs for one Affinity® Three Birthing Bed. However, your facility can modify this checklist or design another to fit your needs. Two effective ways to reduce downtime and ensure the patient remains comfortable are keeping close records and maintaining the Affinity® Three Birthing Bed.

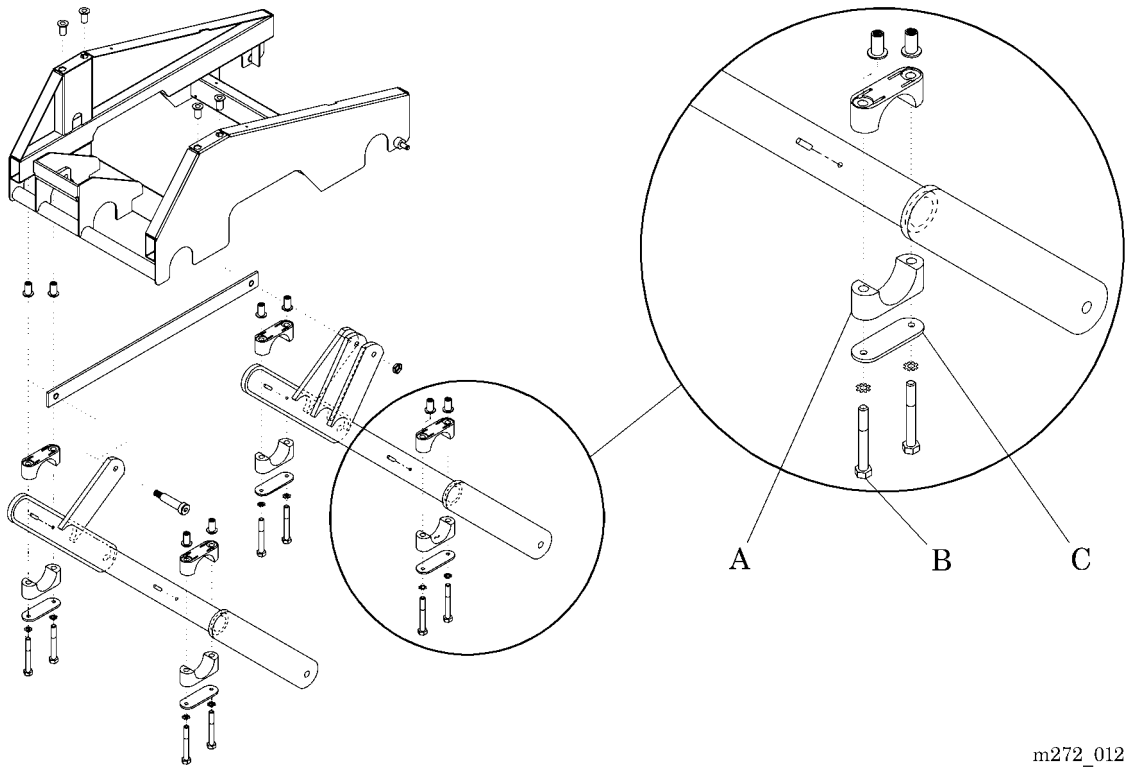
Inspecting the Pivot Point Fasteners

WARNING:
Inspect the pivot point fasteners semi-annually. Failure to do so could result in personal injury or equipment damage.

1. Inspect the pivot point fasteners (see figure 6-1 on page 6-9).
2. If the pivot point fasteners (A) are finger-loose, or a gap is visible between the bolt head (B) and the pivot block plate (C), perform the following steps:
   a. Remove the bolt.
   b. Apply Loctite®[1] adhesive to the bolt threads.
   c. Reinstall and tighten the bolt.

1. Loctite® is a registered trademark of Loctite Company, Inc.

Figure 6-1. Pivot Point Location (Intermediate Frame)



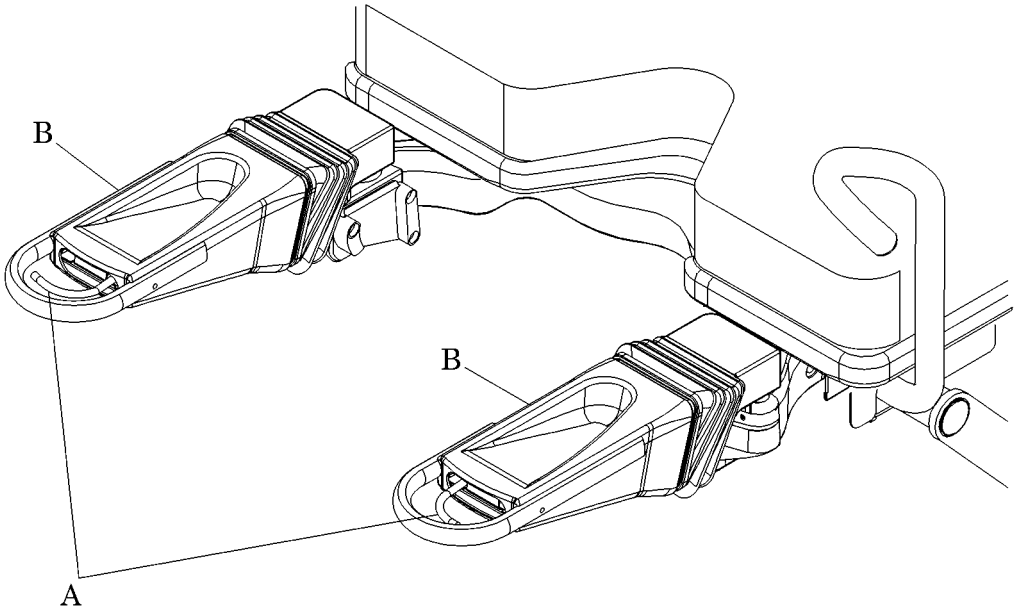
Inspecting the Foot Supports

Tools required: Tape measure

The foot support assembly requires periodic inspection and lubrication. Perform the following to inspect the foot support assembly:

1. Rotate the foot support (B) upward (see figure 6-2 on page 6-10).
2. Ensure that the foot supports (B) latch in each ratchet notch.
3. To ensure proper latching, deliver a solid, downward impact at two to three places on the foot support (B).
4. Pull the release latch (A) to release the foot support (B).
5. Ensure that the release latch (A) operates smoothly, and that it re-engages the foot support (B) when released at anytime during the downward movement.

Figure 6-2. Foot Support Assembly



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6. Pull the release latch (A) to swing the foot support (B) outward.
7. To ensure proper engagement of the release latch (A), release the latch two to three times during the outward motion.
8. Return the foot support (B) to its original position.
9. Remove the foot support (B) from the foot yoke (refer to procedure 4.12). The removal should be smooth and easy.
10. Check the foot support (B) for any missing, loose, misplaced and wrong parts.
11. Check the finish on the surfaces of the foot support (B).
12. Ensure that the plastic foot pad sits flush and centered with the foot rest casting, and that no gaps are evident.
13. Ensure that all foot support (B) functions work properly after the completion of the inspection.

Preventive Maintenance Schedule

Table 6-2. Preventive Maintenance Schedule

Function	Procedure
Siderail controls	Check the switches in the siderails to ensure they are functioning correctly. Also check for intermittent operation. For replacement instructions, see “Patient Siderail (Inboard) P.C. Switch Board” on page 4-74.
Siderail frame	Check the siderail frame to ensure proper latching and down storage. Repair as necessary (see “Logic Control P.C. Board Assembly” on page 4-58).
Caster tires and central brake and steer	Check the tires for cuts, wear, tread life, etc. Apply the brake, and check to ensure that the bed will not move. If the bed moves, inspect it for wear, and adjust if required. See “Caster Assembly” on page 4-82. Apply the steering pedal and check the steering to ensure proper locking action when activated. See “Caster Assembly” on page 4-82.
Communications	Test all SideCom® Communication System features (radio, TV, light, entertainment, and nurse call functions) for proper operation. Inspect the communication cable for cuts, nicks, or breaks. Inspect the male pins and female receptacle in the connecting plug.
CPR release	Test the CPR release for proper operation and reset of the head drive system. When the CPR release is pulled, the bed should lower from any position into a flat position within 7 seconds with at least 50 lb (23 kg) of weight on the head section.
Electrical test	Test the bed for electrical leakage. Ground resistance must be less than 0.20Ω. Leakage current must be **less than** 100µA for 120V models, and **less than** 150µA for 230V models.
Battery test	Test the battery voltage at connector P5 at the control P.C. board. Voltage should be 25V DC to 30V DC.

Table 6-2. Preventive Maintenance Schedule

Function	Procedure
Trend-Like function limits	Make sure that the Trend-Like function handles are accessible on both sides of the bed, and check for proper handle functions as follows: • Push down on the Trend-Like function handle. The head end lowers from the level position to 8°, relative to the foot end. • Pull up on the Trend-Like function handle. The head rises from the Trend-Like position to the level position. • Repeat the steps using the Trend-Like function handle on the other side of the bed.
Hilow limits	Operate the hilow section to the full upper and lower limits. See "Specifications" on page 1-19. Check that the position sensors function properly.
Head limits	Operate the head section to the full upper and lower limits. See "Specifications" on page 1-19. Check that the position sensors function properly.
Foot limits	Operate the foot section to the full upper and lower limits. See "Specifications" on page 1-19. Check that the position sensors function properly.
LED indicators	Check all LED indicators on the caregiver control panel for proper operation.
Night light	Check the night light for proper functioning. The sensor for this light is very sensitive to ambient light and does not turn on the light unless placed in complete darkness. To test, cover the sensor **completely** with a folded dark cloth.
Pendant control	Check the pendant control for proper operation. Visually inspect the cord to ensure it has no cuts, nicks, or breaks. Replace if necessary.
Pivot points	Inspect the shoulder bolts through the pivot blocks on the frame (see figure 6-1 on page 6-9). Apply Loctite®[a] adhesive, and tighten if necessary. Inspect pivot points for wear, and lubricate if noisy.

a. Loctite® is a registered trademark of Loctite Corporation, Inc.

Table 6-2. Preventive Maintenance Schedule

Power cord and plug	Inspect the power cord and plug for cuts, nicks, or breaks.
Lockout switches	Test each switch separately for proper function.
Foot section	Inspect for proper slide engagement of the foot section to the foot yoke casting assembly.
Air system	Test the air system functions (air bladders) for proper inflation and deflation. Also inspect the mattress for punctures, cuts or tears. Check the air compressor assembly, hose connections, and "O" rings for signs of leakage.
Electrical compartment covers	Inspect the covers for signs of fluid leakage into the electrical compartment.
Foot supports	Check the latch/release mechanism for proper operation. Verify positioning to ensure there is no binding. Ensure the foot support rotates up to a 85° position. Inspect the foot supports (see “Inspecting the Foot Supports” on page 6-9). Repair or replace as required.
Calf supports	Check the latch/release mechanism for proper operation. Verify free rotation to ensure there is no binding. When the release handle is rotated to the right (clockwise), the ball joint should tighten; when rotated to the left (counterclockwise), the ball joint should loosen. Repair or replace as required.
Labor grips	Check that the labor grips latch properly and are functional.
Headboard	Check the headboard appearance and functionality.
Mattress inspection	Inspect the ticking for punctures or any other type of compromise. Inspect the interior of the mattress for any contaminates. Inspect air bladders (if present) for leaks, and ensure proper air supply connection.
Overall appearance	Touch up the paint where necessary. Inspect the labels, and replace if necessary. Check the general aesthetics of the bed. Observe the symmetry of the bed by viewing it from each corner while looking toward the opposite corner (i.e., view from left side, foot end looking toward right side head end). Ensure that the foot and head are not bent out of alignment.

Preventive Maintenance Checklist

Table 6-3. Preventive Maintenance Checklist

Date																						**Function**
Hill-Rom	**Manufacturer**																					Siderail controls
																						Siderail frame
																						Casters
																						Central brake and steer
																						Communications
																						CPR release
																						Electrical test
	Model Number																					Battery test
																						Trend-Like function limits
																						Hilow limits
																						Head limits
																						Foot limits
																						LED indicators
																						Night light
	Serial Number																					Pendant control
																						Pivot points
																						Power cord and plug
																						Lockout switches
																						Foot section
																						Air system
																						Electrical compartment covers
Total Cost for this Page																						**Labor Time:**
																						Repair Cost:
																						Inspected by:
																						Legend L=Lube C=Clean A=Adjust R=Repair or Replace O=Okay N=Not Applicable Remarks:

Table 6-3. Preventive Maintenance Checklist

Date																						**Function**
Hill-Rom	**Manufacturer**																					Foot supports
																						Calf supports
																						Labor grips
																						Headboard
																						Mattress inspection
																						Overall appearance
	Model Number																					
	Serial Number																					
	Total Cost for this Page																					**Labor Time:**
																						Repair Cost:
																						Inspected by:
																						Legend L=Lube C=Clean A=Adjust R=Repair or Replace O=Okay N=Not Applicable Remarks:

Using Loctite®[1] Adhesive

The proper use of Loctite® retaining compounds during service is essential to enable certain fasteners to be correctly retained.

The Loctite® adhesive/sealant retaining compounds, are anaerobic, single-component resins supplied as a liquid. These resins remain in a liquid state in the presence of air, but harden into insoluble plastic film solids when confined between clean, close-fitting metal surfaces. They can be used in conjunction with natural rubber, glass, ceramics, and thermosetting plastic surfaces, such as phenolic and polyester. Also, they do not usually harm nylon, polyethylene, or saran. However, in their liquid state, they sometimes soften or craze vinyl, cellulosic, styrene, methacrylate plastic, such as Plexiglas®[2], and varnished finishes. Cured resins do not affect any of these materials. It is important to note that an opened bottle of these products has a definite shelf-life of about 6 months, which affects its serviceability.

The resins referred to within this manual usually cure to their hardened state on metal parts without need of primers. However, the use of a recommended primer will help degrease the part and leave a light deposit of a catalyst to speed curing. The temperature of the parts also affects their cure time. At 40° F (4° C) it may take weeks to cure, but at 75° F (24° C), parts cure within the time length indicated on the bottle.

WARNING:
Use primers with adequate ventilation. Avoid skin contact and prolonged or repeated breathing of vapors. Do not allow primers to be trapped under rings, watch bands, etc. Observe all directions on the primer can. Failure to do so could result in personal injury.

When using the product recommended during the service procedure:

1. Disassemble the parts, remove the old Loctite®, and clean the parts. Reapply the new Loctite® during reassembly.
2. Apply to clean surfaces only. If necessary, degrease the parts.
3. Use liquid sparingly (usually one or two drops on threaded fasteners). Be sure to apply where thread engagement begins.
4. Assemble the parts and allow them to cure. Observe the time stated on bottle label before placing back into service.

1. Loctite® is a registered trademark of Loctite Corporation.
2. Plexiglas® is a registered trademark of Rohm and Haas Company.

WARNING:
Avoid excessive or repeated skin contact with the liquid. Repeated contact with the liquid could result in personal injury.

If difficulty is experienced in removal or disassembly of a part with Loctite® #262 or #271 applied, heating the screw, bolt, nut, etc. aids in its removal.

Purple Loctite®[1] Adhesive #222 (P/N SA4842)

Typical usage is as a low strength adhesive for screws. It is also suitable for sealing threads, fittings, and cylindrical parts. It normally cures in 2 to 6 hours at 75° F (24° C) and permits disassembly under condition of maximum thread engagement.

Blue Loctite® Adhesive #242 (P/N SA3618)

Typical usage is as a medium strength adhesive for nuts, screws, keys, and splines. It is not normally used on fasteners smaller than ¼" (6.4 mm) with more than ½" (12.7 mm) engagement **if removal is desired**. It is also suitable for hydraulic, pneumatic, and pipe fittings. It normally cures in 2 to 6 hours at 75° F (24° C) and permits disassembly under condition of maximum thread engagement.

Red Loctite® Adhesive #262 (P/N SA4841)

Typical usage is as a medium to high strength adhesive for nuts, screws, etc. Normally it is not used on fasteners smaller than ¼" (6.4 mm) with more than ½" (12.7 mm) engagement **if removal is desired**. It normally cures in 0.5 to 2 hours at 75° F (24° C) and permits disassembly under condition of maximum thread engagement.

Red Loctite® Adhesive #271 (P/N SA4840)

Typical usage is as a high strength adhesive for studs and screws. It is not normally used on fasteners smaller than 3/8" (9.5 mm) with more than ½" (12.7 mm) engagement **if removal is desired**. It is also suitable for hydraulic, pneumatic, and pipe fittings. It normally cures in 0.5 to 2 hours at 75° F (24° C) and **does not** permit easy disassembly.

1. Loctite® is a registered trademark of Loctite Corporation.

Tool and Supply Requirements

To service the Affinity® Three Birthing Bed, the following tools and supplies are required:

- Digital or analog multimeter (VOM)
- Ratchet
- T10 Torx®[1] head bit
- T25 Torx® head bit
- 7/16" socket
- ¾" socket
- 5/16" wrench
- 7/16" wrench
- ½" wrench
- 11/16" wrench
- Adjustable wrench
- 3/32" Allen™[2] wrench
- 5/32" Allen™ wrench
- Small screwdriver
- Short phillips head screwdriver
- Needle nose pliers
- External snap-ring tool
- E-ring tool
- Split-ring tool
- Small wire cutters
- Hammer
- 1/8" drift punch
- Tape measure
- Marker pen
- Bed jack

1. Torx® is a registered trademark of Textron, Inc.
2. Allen™ is a trademark of Industrial Fasteners, Inc.

- Bed stands, or (4) pieces of 2" x 4" x 32" lumber
- Anti-seize lubricant
- Blue Loctite®[1] #242
- Red Loctite® #262
- Isopropyl alcohol
- Turpentine

1. Loctite® is a registered trademark of Loctite Corporation.

NOTES:

Chapter 7
Accessories

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NOTES:

Accessories

For Affinity® Three Birthing Bed accessories, see table 7-1 on page 7-3.

Table 7-1. Accessories List

Product Number	Description
P9625	Anesthesia screen (maximum safe working load of 5 lb (2.3 kg))
P9620	Armboard (maximum safe working load of 30 lb (14 kg))
P3704	Calf supports, attached (maximum safe working load of 60 lb (27 kg))
P35745A	Calf supports, telescoping (maximum safe working load of 60 lb (27 kg))
P3612EA	Comfort pad
B7831	Disposable drape
P3623	Foley hook kit (maximum safe working load of 20 lb (9 kg))
P451A	Foot rest bar (maximum safe working load of 150 lb (68 kg))
P7625C	Full leg supports, attached (maximum safe working load of 60 lb (27 kg))
P7634C	Full leg supports, telescoping (maximum safe working load of 60 lb (27 kg))
P278, P27802	Instrument tray (lift/slide) (maximum safe working load of 25 lb (11 kg))
P156	ISS mobile stand kit (maximum safe working load of 40 lb (18 kg))
P159	ISS offset bar (maximum safe working load of 40 lb (18 kg))
P158	ISS transfer pole (maximum safe working load of 40 lb (18 kg))
P3613	Labor bar (maximum safe working load of 100 lb (45 kg))
P276	O_2 tank holder (maximum safe working load of 30 lb (14 kg))

(Continued on next page.)

Table 7-1. Accessories List *(cont'd)*

Product Number	Description
P5362	Pendant control
P222101	Permanent IV pole (maximum safe working load of 25 lb (11 kg))
P495	Phone
P496	Phone adaptor
SA1528	Sheets, V-cut (complete)
SA1529	Sheets, straight (complete)
SA4585	Sheets, V-cut (two-piece)
SA4586	Sheets, straight (two-piece)
P3705	Siderail pads
P3628B	Slipcover, cut head section, air
P3630EA	Slipcover, foot section
P3626B	Slipcover, straight edge head section, without air
P3627B	Slipcover, straight edge head section, air
P3625B	Slipcover, V-cut head section, without air
P3619	Wedge assembly
P3710	Lumbar wedge
P3629B	Headboard, plastic, blow-molded
P3617B†	Headboard, wood—standard (oak or cherry)
P923617B	Headboard, wood—Liberty Hill (cherry)
P933617B	Headboard, wood—Freedom Hill (oak)

† Specify wood finish.

7.1 Labor Bar (P3613)

Tools required: None

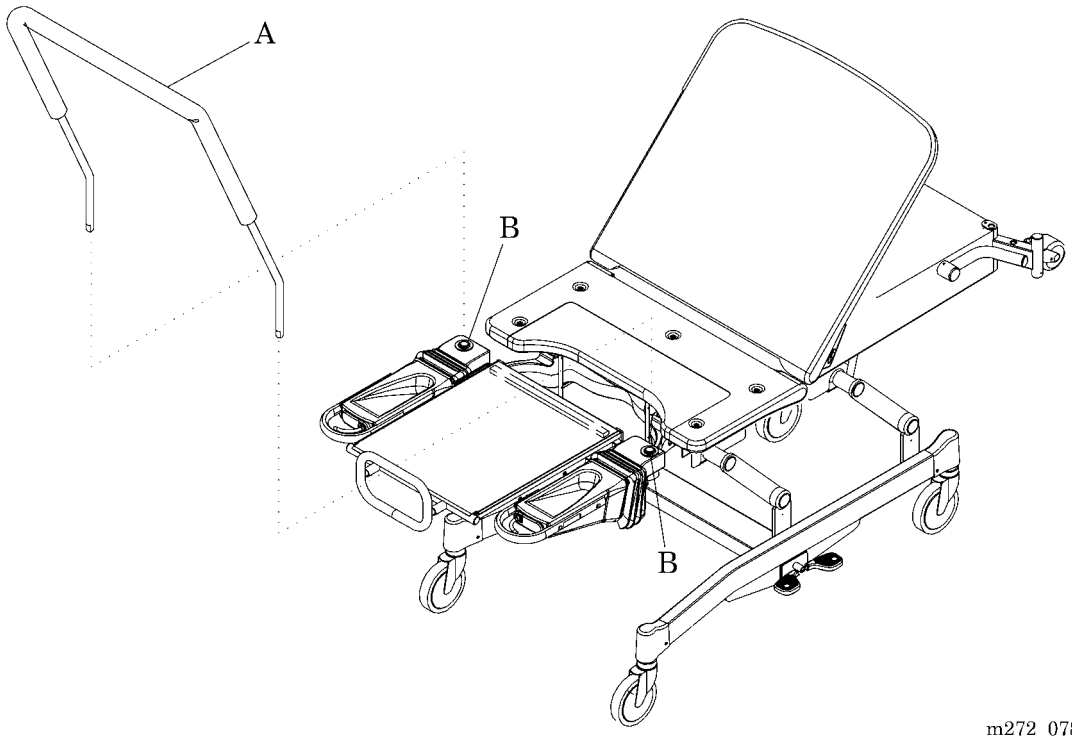
Installation

WARNING:
The labor bar is intended to be used in the prescribed manner only. Failure to use this product as outlined may result in personal injury or equipment damage.

1. Determine the orientation of the labor bar that is required for the position of the patient.

2. Insert the labor bar (A) into the leg support sockets (B) between the seat and foot cushions (see figure 7-1 on page 7-5).

Figure 7-1. Labor Bar



Adjustment

Using the foot section controls, raise or lower the labor bar (A) to the desired height.

NOTE:
The labor bar can be used in either direction for different positions and purposes.

Removal

To remove the labor bar (A), reverse the installation procedure.

7.2 Oxygen Tank Holder (P276)

Tools required: None

The oxygen tank holder attaches to the head end of the frame in a vertical position. The oxygen tank holder accommodates one E-size oxygen tank with a regulator. The mounting points are located to allow the attached oxygen tank holders to pivot.

Installation

1. Install the mounting bar vertically into a mounting socket at the head end of the frame.
2. Place one E-size oxygen tank in the holder.
3. Tighten the holder thumbscrew.

NOTE:
The thumbscrew keeps the oxygen tank from rotating in the holder.

Removal

1. Loosen the thumbscrew that holds the tank securely in the holder.
2. Lift the tank out of the holder.
3. Lift up on the tank holder, and remove it from the mounting sockets.

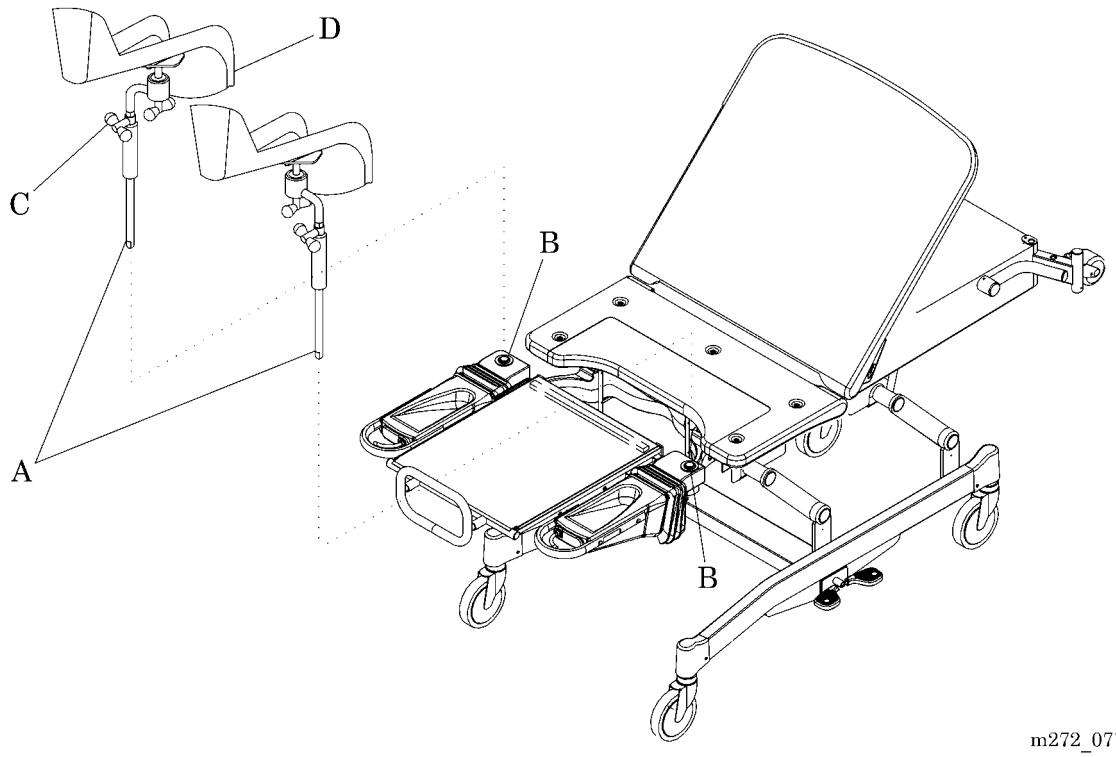
7.3 Telescoping Calf Supports (P35745A) or Telescoping Full Leg Supports (P7634C)

Tools required: None

Installation

1. Set the brake/steer pedal to the brake position.
2. Ensure that the bed is out of the Trend-Like position.
3. Using the foot function, position the foot section in a mid-height position.
4. Position and insert the telescoping supports (A) into the mounting post (B) (see figure 7-2 on page 7-8).

Figure 7-2. Telescoping Calf or Full Leg Supports



5. Ensure that the telescoping supports (A) are fully seated and indexed in the appropriate position.

NOTE:
The ball joints can be indexed inward or outward for different sized patients.

Adjustment

1. Loosen the swivel clamp screws (C) to enable the cradles (D) to be swiveled to the desired direction.

2. Tighten the swivel clamp screws (C) to secure the cradles (D) in the desired position.

WARNING:
Insufficient tightening will allow the cradles to slip and lose their original position. Personal injury could occur.

WARNING:
The supports are intended to be used in the prescribed manner only. Failure to use this product as outlined may result in personal injury or equipment damage.

Removal

To remove the telescoping supports, reverse the installation procedure.

NOTES:

Wiring Diagram/Schematic

Back to Chapter 3

1.) LIMIT CONDITIONS HAVE NOT BEEN REACHED FOR SWITCH POSITIONS SHOWN.

2.) FOR DETAIL OF CIRCUIT BOARDS SEE SERVICE MANUAL.

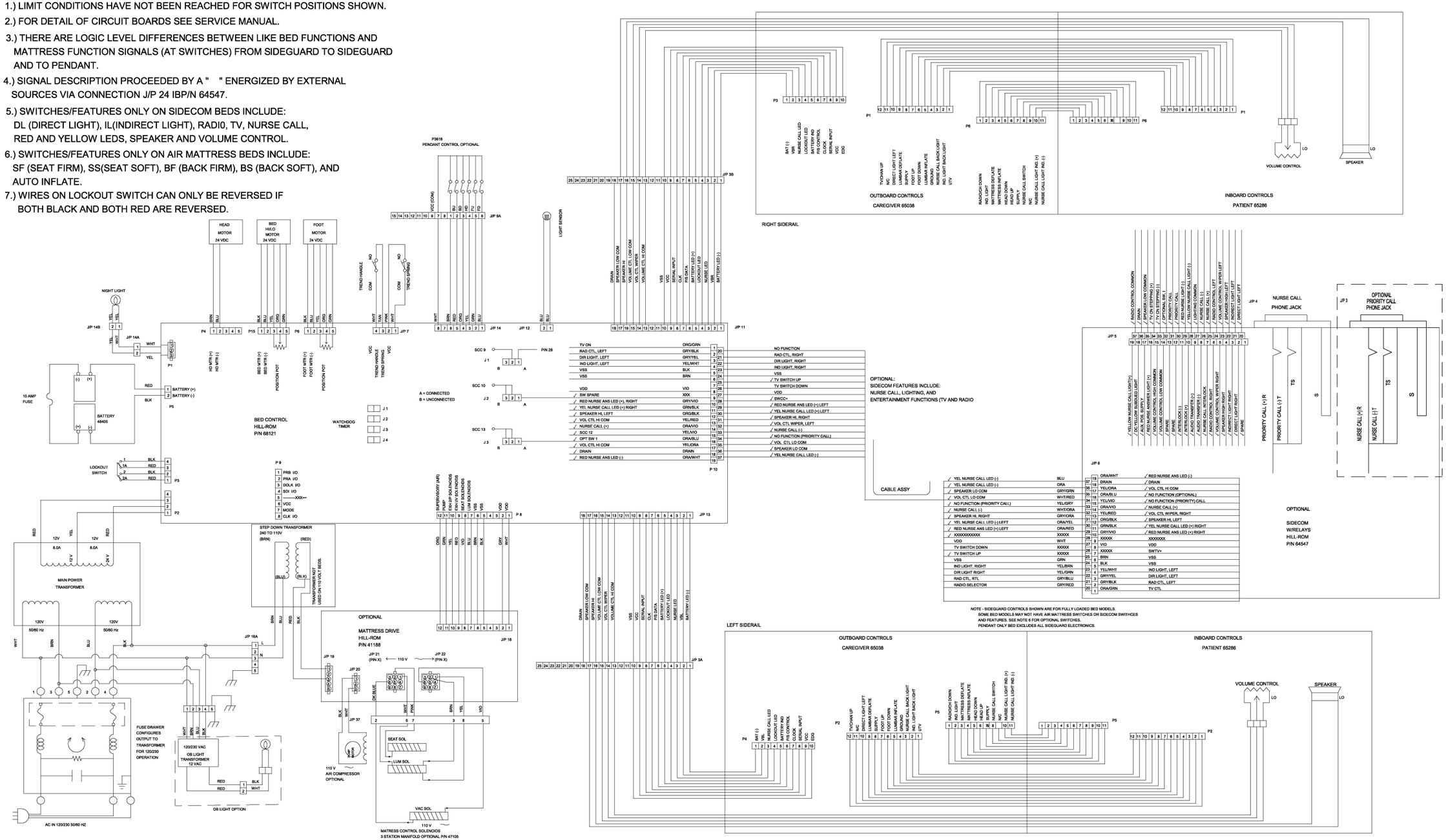
3.) THERE ARE LOGIC LEVEL DIFFERENCES BETWEEN LIKE BED FUNCTIONS AND MATTRESS FUNCTION SIGNALS (AT SWITCHES) FROM SIDEGUARD TO SIDEGUARD AND TO PENDANT.

4.) SIGNAL DESCRIPTION PROCEEDED BY A " " ENERGIZED BY EXTERNAL SOURCES VIA CONNECTION J/P 24 IBP/N 64547.

5.) SWITCHES/FEATURES ONLY ON SIDECOM BEDS INCLUDE: DL (DIRECT LIGHT), IL(INDIRECT LIGHT), RADI0, TV, NURSE CALL, RED AND YELLOW LEDS, SPEAKER AND VOLUME CONTROL.

6.) SWITCHES/FEATURES ONLY ON AIR MATTRESS BEDS INCLUDE: SF (SEAT FIRM), SS(SEAT SOFT), BF (BACK FIRM), BS (BACK SOFT), AND AUTO INFLATE.

7.) WIRES ON LOCKOUT SWITCH CAN ONLY BE REVERSED IF BOTH BLACK AND BOTH RED ARE REVERSED.


RIGHT SIDERAIL
OUTBOARD CONTROLS
CAREGIVER 65038
INBOARD CONTROLS
PATIENT 65286
VOLUME CONTROL
SPEAKER
P3618
PENDANT CONTROL OPTIONAL
HEAD MOTOR 24 VDC
BED HI/LO MOTOR 24 VDC
FOOT MOTOR 24 VDC
NIGHT LIGHT
10 AMP FUSE
BATTERY 48405
LOCKOUT SWITCH
BED CONTROL HILL-ROM P/N 68121
WATCHDOG TIMER
A = CONNECTED
B = UNCONNECTED
OPTIONAL: SIDECOM FEATURES INCLUDE: NURSE CALL, LIGHTING, AND ENTERTAINMENT FUNCTIONS (TV AND RADIO
CABLE ASSY
NURSE CALL PHONE JACK
OPTIONAL PRIORITY CALL PHONE JACK
OPTIONAL SIDECOM W/RELAYS HILL-ROM P/N 64547
STEP DOWN TRANSFORMER 240 TO 110V
MAIN POWER TRANSFORMER
FUSE DRAWER CONFIGURES OUTPUT TO TRANSFORMER FOR 120/230 OPERATION
AC IN 120/230 50/60 HZ
OB LIGHT OPTION
OPTIONAL MATTRESS DRIVE HILL-ROM P/N 41188
110 V AIR COMPRESSOR OPTIONAL
SEAT SOL
LUM SOL
VAC SOL
MATTRESS CONTROL SOLENOIDS 3 STATION MANIFOLD OPTIONAL P/N 47105
LEFT SIDERAIL
OUTBOARD CONTROLS
CAREGIVER 65038
INBOARD CONTROLS
PATIENT 65286
VOLUME CONTROL
SPEAKER
NOTE - SIDEGUARD CONTROLS SHOWN ARE FOR FULLY LOADED BED MODELS.
SOME BED MODELS MAY NOT HAVE AIR MATTRESS SWITCHES OR SIDECOM SWITHCES AND FEATURES. SEE NOTE 6 FOR OPTIONAL SWITCHES.
PENDANT ONLY BED EXCLUDES ALL SIDEGUARD ELECTRONICS.

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